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CONTENTS.

Original Communications.

PAGE

The Therapeutic Action of Aconite in Croupous Pneumonia. By Thos. J. Mays, M. D. ... 217
Buttermilk in Sick Stomach. By R. J. Peare, M.D. ... 221
Salicylate of Potassium in Acute Rheumatism. By E. L. Miller, M. D. ... 222
Kola, a Physiological and Therapeutical Study. By Dr. Leon Ernest Monnet ... 223
Nitro-glycerin in the Cold Stage of Intermittent Fever. By Charles Weil, M.D. ... 225
Coca and Cocaine. By Laurence Turnbull, M.D., Ph.G. ... 226
Retrospective and Prospective Therapeutics. By A. G. Huston, M.D. ... 229
Medico-Legal Notes. By Henry A. Riley, Esq ... 233
Convulsions Occurring in a Hand-fed Child, Due to Over-feeding. By Henry C. Archibald, M.D. ... 234
About Pneumonia. By A. Patten, M.D. ... 234

Leading Articles.

The Physiological Action of Cocaine ... 238
Cocaine in General Practice ... 242
Notes on the Treatment of Typhoid Fever ... 243
The Poisons of Organic Decompositions ... 244
Rhigolene ... 245
The Local Action of Drugs on Blood-Vessels ... 246

Reports on Therapeutic Progress

The Action of Paraldehyde ... 247
Action of Nitrite of Sodium and Nitro-Glycerin ... 250
Local Treatment of Suppurative Otitis ... 252
Iodoform in Syphilis ... 253
On the Value of Natural Mineral Waters in Heart-Disease ... 254

PAGE.

Apomorphine in Nervous Affections ... 255
The Significance and Treatment of Hæmoptysis ... 256
Death After the Use of Antipyrine ... 257
Uterine Dyspepsia ... 257
Trypsin as a Solvent of Diphtheritic Membrane ... 258
Self-Delivery by Laparotomy ... 259
Croton Oil Treatment of Ring-worm ... 259
The Therapeutics of Typhlitis ... 260
Jequirity as a Remedy for Granular Lids with Pannus ... 261
Pulverized Vaccine Virus ... 261
Notes on the Action of Paraldehyde, the New Hypnotic ... 262
Cholagogues ... 262
Coca in Fatigue ... 263
On the Comparative Action of Some Preparations of Mercury ... 263
The Prevention of Ophthalmia in New-Born Children ... 264
A New Remedy Against Diphtheria ... 264
Continuous Traction in the Treatment of Pott's Disease ... 265
Veratrine in Muscular Tremor ... 265
Cocaine in Dysmenorrhœa ... 265
Apomorphine as an Emetic ... 266
A New Permanent Antiseptic Dressing ... 266
Influence of Vapors of Bi-sulphide of Carbon and Chloride of Sulphur on the Vision and General Health ... 267
Hydrochlorate of Cocaine in the Treatment of Nasal Affections ... 267
The Use of Hyoscyamine in Delirium Tremens ... 268
Ether-spray on the Vertebral Column ... 268
The Physiological Action of Cocaine ... 268
Phenol-camphor ... 269
Hamamelis Virginica in Hæmorrhage from the Bowels ... 269
Hydrochlorate of Hydrastine ... 270
The Treatment of Œsophageal Cancer ... 270
Tannic Acid Injections in Cholera ... 271
Cinchonidine and Picrotoxine ... 271
A New Method of Treating Acute Intestinal Obstruction ... 272
Chorea Treated with Continuous Inhalation of Chloroform ... 272
Oxide of Zinc in the Treatment of Wounds ... 273
The New Treatment for Gonorrhœa ... 273

PAGE.

Menyanthes Trifoliata ... 274
The Cure of Writer's Cramp ... 274
The Treatment of Ringworm of the Scalp ... 275
The Value of Quinine, and Some of its Congeners in Parturition ... 276
Treatment of Sore Throat of Scarlet Fever ... 276
Naphthalin in Cystitis ... 276
The Treatment of Gonorrhœa by Jacaranda Lancifoliata ... 277
Osmic Acid in Sciatica ... 277
The Therapeutic Properties of Thyme ... 277
Urethral Spasm in the Female Relieved by Cocaine ... 278

Reviews ... 278

Correspondence.

An Improved Method of Making applications to the Uterine Mucous Membrane ... 282
Hyoscyamus as a Hypnotic ... 283
A Very Doubtful Case ... 283

Notes and Queries.

Pharmacopœia Characters and Tests for Antipyrine, Cannabine Tannate, Cocaine Hydrochlorate and Paraldehyde ... 283
Poisoning by the Bite of a Rat ... 284
Preservation of Solutions of Cocaine ... 285
Death from Nitrous Oxide Gas ... 285
A Simple Method of Testing the Quality of Human Milk ... 286
Cannabinon ... 286
A New, Successful and Palatable Medicine for the Treatment of Tape-Worm ... 287
Cascara Sagrada ... 287
International Pharmaceutical Congress ... 287
Vaseline in Pastry ... 287
Carbolized Resin in In-growing Toe-nail ... 288
Drugs for the Paris Hospitals ... 288
An Apparatus for Removing Diphtheritic Membrane ... 288
A New Cure for Indigestion ... 288
Hydrargyrum Tannicum ... 288
Prevention of Chrysarobin Staining ... 288

Original Communications.

THE THERAPEUTIC ACTION OF ACONITE IN CROUPOUS PNEUMONIA.

By Thos. J. Mays, M. D., Philadelphia, Pa.

ACONITE in acute pneumonia is one of those agents which illustrate the utility of the modern methods of pharmacological inquiry. In saying this I am not unmindful of the prevailing impression that, because pneumonia is a self-limited disease, remedial agents are rather prejudicial than beneficial to the interests of the patient. This let-alone policy is based on the delusive observation that side by side one patient will die under the best care and treatment, while the other will get well without any. It is a strange fatality that we are prone too often to look upon one being as an identical counterpart, both in structure and in function, of another, and forget that our therapeutic efforts cannot be judged alone by the results of success or of failure to save life. For the individual peculiarities, the vulnerability of special organs, and the manifold influences, both inherited and acquired, which are constantly at work in making man unlike his fellow beings have a powerful weight in shaping the products of practical medicine; and it is no surprise, therefore, that some will die under treatment, while others recover if left alone.

If it were assured in advance, however, that the patient's constitution had sufficient resisting power to successfully overcome the disease and its consequences, then would we indeed be justified in consigning him to therapeutic nihilism; but since this is manifestly impossible we are bound to make efforts to combat the course of the disease and to enhance the physiological resistance of the patient. This requires a knowledge of the special tendency towards death, and the selection of a remedy or remedies which will antagonize this tendency.

Whether pneumonia is due to a specific germ or not it is certain that it is inflammatory in character. The affected lung texture becomes engorged, and fibrinous exudation, solidification, and resorption follow in due order. These different steps of disintegration are accompanied by pain, dyspnœa, cough, elevation of temperature, accelerated respiration and a moderately slow and hard pulse. Probably the most prominent and interesting feature in the pathology of sthenic pneumonia is the relatively slow pulse and the quick breathing. In pleurisy, bronchitis, etc., the relation between the two is preserved, but in pneumonia this is disturbed, the pulse becomes abnormally slow, and the breathing exceedingly fast.

Now whatever else may be said it is very obvious that an increase of arterial blood-pressure plays an important part in the production of pneumonia. The intense engorgement, the exudation of white and red blood-corpuscles and especially of fibrinous material, all point in the direction of an increased arterial tension forcing their products into the surroundings.[1] Indeed, according to the recent experiments of Dr. Hamilton, it is exceedingly doubtful whether fibrinous exudation ever takes place unless there is an increase of pressure,[2] either local or general, within the blood-vessels. This increase, according to the pathological law that the heart-rate maintains an inverted ratio to the arterial tension, accounts for that disparity which exists between the circulatory and respiratory movements mentioned above, and which Walshe so accurately defines as the perverted pulse-respiration ratio; for there can be no doubt that the heart's action would be accelerated as greatly as that of the lungs if it were not checked by undue arterial tension. The abnormal blood-pressure has its inception when the disease is ushered in by a chill and the blood is driven from the exterior to the interior of the body, and especially to the vascular lung structure, producing congestion and stasis in these organs. After the blood-flow is once arrested, the pulmonic tension and the strain upon the right side of the heart increases up to the time of solidification of the affected part of the lung, even though the systemic circulation is restored to a more nearly normal equilibrium after the initial effects of the disease have passed away.

From this short and imperfect history of the pathology of pneumonia, it is obvious that the strong therapeutic indication is towards lowering the arterial tension. This can be accomplished (1) by abstracting a sufficient amount of blood, and (2) by weakening the calibre of the circulatory organ. It is not within the province of this paper to speak of the merits and demerits of venesection, yet there is nothing more certain than that bleeding is a grand remedy in the early stage of acute croupous pneumonia. It diminishes the blood-volume, lowers the tension, and thus lessens the tendency to exudation, if performed promptly and thoroughly. If the practitioner is not consulted sufficiently early to do it, or if from any other cause it is omitted, other measures must be instituted to lower the blood-pressure, and this brings us to a discussion of the action of aconite.

Experiments upon animals and poisoning in man show that aconite chiefly acts upon the heart and upon the blood-vessels—increasing the tone of both in minimum doses, and reducing the number of pulsations and diminishing the arterial tension in maximum doses. It does not affect the circulatory organ alone, but also influences voluntary muscle and sensibility. All investigations demonstrate, however, that it has a special affinity for the motor structures of the body, especially for those of the vascular apparatus, and it is due to this that it arrests the heart in diastole. Digitalis acts upon the heart by influencing its nervous structure, and for this reason it arrests the organ in systole. In a recent investigation[1] of the action of a number of alkaloids and active principles, among which were digitaline, strychnine, morphine, caffeine, atropine, aconitine, pilocarpine, resorcine, salicine, curare, saponine, lycopine,

[1] See *Practitioner*, vol. xxiv.

[2] See also Handbuch der Allgemeinen Pathologie des Kreislaufs und der Ernährung, von Prof. Dr. von Recklinghausen. 1884. Encke, Stuttgardt.

[1] See my article on the "Action of Drugs on the Frog's Heart," in February number, 1885, of THERAPEUTIC GAZETTE.

veratrine, gelsemine, delphinine, etc., upon the heart of frogs, I invariably found that those agents which show a decided action upon nervous irritability arrest the heart in systole, while those which affect muscular irritability arrest it in diastole. The affinity of digitalis and of aconite for different parts of the same apparatus is the reason, then, why they differ so widely in their therapeutic application. Both are employed for the purpose of reducing the number of cardiac pulsations, but when aconite effects this, the blood-pressure sinks, and when digitalis does the same, the blood-pressure rises. While aconite improves the arterial tension in small doses by acting as a stimulant, it is far inferior for this purpose to digitalis, and hence, is chiefly employed in diseases with increased arterial tension and in maximum doses, and digitalis is only applicable to diseases with lowered arterial tension and in minimum doses.

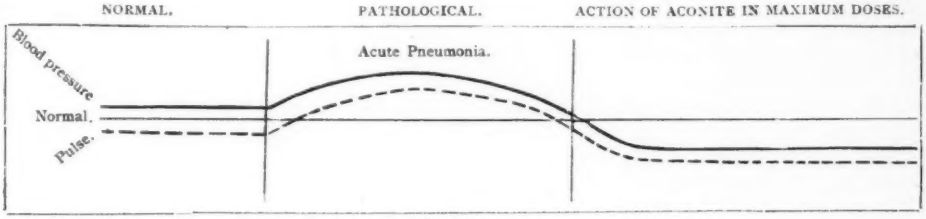

DIAGRAM 1.

Maximum doses of digitalis also reduce or diminish the blood-pressure and the number of cardiac pulsations, but it is an exceedingly unsafe remedy to employ for this purpose. Although aconite is generally believed to be much more poisonous than almost any other active drug, yet I have found throughout all my experiments that after a heart was once poisoned or paralyzed by maximum doses of digitalis, or by any of the agents strongly affecting nervous irritability, the heart was in most instances permanently disabled from making any further pulsations, even under the most stimulating influences; while, on the contrary, after the heart was paralyzed by any of the agents strongly affecting the muscular irritability, it, without a single exception, began to pulsate almost as freely as before as soon as it was liberated from the poisonous influence. It is evident, therefore, that as far as maximum doses of digitalis are concerned, their therapeutic action is not interchangeable with that of aconite. Again, when maximum doses of digitalis cause the blood-pressure to sink, the cardiac pulsations, in accordance with the well-known physiological law quoted above, are accelerated far beyond their normal bounds, while in aconite poisoning, contrary to this law, the cardiac pulsations are reduced *pari passu* with the fall of the blood-pressure. This is in all probability also due to the varying affinity of the two agents. Aconite by antagonizing contractility of the blood-vessels produces dilatation of the vascular mechanism, and it is really in virtue of this power that it lowers the tension and slackens the movements of the heart. When the poisoning-process of aconite has once begun, contrary to what it does under digitalis, the heart loses its contractile power and its pulsations grow less and less until it is arrested in diastole.

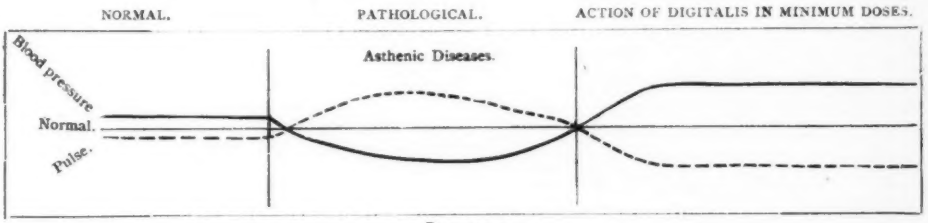

DIAGRAM 2.

A graphic illustration of the comparative action and application of aconite and digitalis results in the following diagrams:[1]

Diagram I. represents the action of aconite in pneumonia on the blood-pressure and pulse. The heavy line indicates the former

[1] The diagram representing the action of digitalis has been partly taken from *Vorlesungen über Pharmakologie, von* Dr. C. Binz. II *Abtheilung*. Berlin, 1884.

and the dotted line the latter. Both ascend over the normal line in pneumonia, the pulse but little, while aconite depresses them both below the normal line.

Diagram II. represents the action of digitalis in asthenic diseases. The pulse rises and the blood-pressure sinks, while under the action of digitalis they again cross each other's path and assume a more nearly normal position.

From all that has been said, I think, the adaptability of aconite in the early stages of acute croupous pneumonia will be readily conceded. On the one hand, there is a sthenic disease, the chief danger of which in these stages is an occlusion of the vesicular structure of the lung on account of an increased blood-pressure within the arterial walls; and, on the other hand, there is an agent which in maximum doses has the power of reducing the blood-pressure by dilating the blood chambers.

There is no evidence which leads us to suppose that aconite has any direct influence on the sudoriparous glands, but large doses soon produce profuse perspiration by paralyzing more or less completely the vaso-motor mechanism, and thus permitting a watery transudation through the vascular walls. Therefore, aconite, by acting on the vascular apparatus, not only reduces the blood-pressure and quiets the heart; but by liberating the blood in the interior and distributing it more equally throughout the body, and so allowing the superabundant heat to escape through the dilated cutaneous capillaries, it plays the part of an important antipyretic.

The following cases will serve to illustrate the action of aconite practically:

CASE I.—Saw J. S. S., *March 1st*, 1884. Had a severe chill the previous night, and complained of pain in right chest, and difficult respiration. Physical examination revealed slightly diminished resonance over lower lobe of the right lung, and exaggerated respiratory sound over same region. Temperature at 10 A. M., 103. Prescribed flax-seed poultice over affected spot, sixteen grains of quinine in one dose, one drop of the fluid extract of aconite every half hour, Valentine's Meat Juice, and plenty of milk. Rusty sputum at 2 P. M., at 3 P. M. pulse 112, hard and full, respiration, 28, temperature 101½; 6:30 P. M., flatness and absence of respiratory sound in base of right lung. Pulse 112; respiration 23; temperature 102½.

March 2nd. 10 A. M., pulse 96; respiration 28; temperature 101½. Slept some last night and perspired. Expectoration bloody and rusty. 7:30 P. M., pulse 86; respiration 28; temperature 102⅕. Perspires quite freely. Took eight grains of quinine at 6 A. M. and four grains at 2 P. M., and one drop of fluid extract of aconite every hour. Otherwise the same.

March 3rd. A. M., pulse 88, respiration 28; temperature 101⅘. Passed a sleepless night but perspired freely. Bloody and rusty expectoration continue. P. M., pulse 84; respiration 28; temperature 102⅘. Perspired profusely during the day, and expectorated more. Had two stools containing blood, the last of which was involuntary. Tongue coated brown. Took six grains quinine at 6 A. M., and eight grains at 1 P. M.

March 4th. A. M., pulse 80; respiration 22; temperature 100. No movements of bowels, expectoration less rusty and becoming more yellow. Tongue heavily coated. P. M., pulse 70; respiration 20; temperature 100. Perspires freely. Instead of aconite, gave digitalis, and with the exception of no more large doses of quinine, treatment the same.

March 5th. A. M., pulse 72; respiration 20; temperature 98⅗. Slept good but perspired profusely. Expectoration very little discolored. Same treatment, except substituting turpentine liniment for poultice.

March 6th. A. M., pulse 72; respiration 20; temperature 98¼. Still perspires. Sulphuric acid and small doses (one grain) of quinine.

March 7th. Feels much better. Good recovery.

CASE II.—Was called to see W. J., March 11th, 1884. Had a chill night before and was then suffering from pain in right chest. Diminished percussion resonance showed itself over lower two-thirds of right lung, as well as roughened inspiratory and expiratory sounds. No crepitation. 10 A. M., pulse 104; respiration 26; temperature 105. Treatment, fluid extract aconite, one drop every hour, sixteen grains of quinine, hot flax-seed poultices to affected region, and plenty of milk and meat juice. 7 P. M., pulse 96; respiration 24; temperature 104. Perspires, very little cough, no rusty sputum. Ten grains of quinine.

March 12th. A. M., pulse 92; respiration 22; temperature 102⅗. Passed a restless night, coughs more, rusty sputum. Perspires. Dullness over base of right lung posteriorly, and diminished resonance anteriorly. Sibilant râles anteriorly and crepitation behind. Quinine twelve grains. Otherwise same treatment

P. M., pulse 96; respiration 30; temperature 103. Ten grains of quinine.

March 13th. A. M., pulse 92; respiration 24; temperature 103⅕. Slept very little, brown expectoration, epistaxis, two motions of bowels, perspires. Quinine sixteen grains. P. M., pulse 84; respiration 24; temperature 104⅕. Restless, perspires, coughs but expectorates very little. Pulse small in volume. Ten grains of quinine, and morphine to produce sleep. Midnight, pulse 96, small and weak; respiration 24; temperature 102⅕. Cold perspiration, red expectoration and very tenacious. Omitted aconite.

March 14th. A. M., pulse 100 and more voluminous; respiration 22; temperature 103⅖. Delirious, cold perspiration. Ten grains of quinine and resumed aconite one drop as before. P. M., pulse 94, more volume; respiration 26; temperature 104. Same treatment.

March 15th. A. M., pulse 100; respiration 24; temperature 102⅘. Slept, expectorates very little. Took four grains of quinine at 6 A. M., and ordered six grains more at once. To stimulate expectoration I gave ipecac, bryonia and senega. P. M., pulse 100, less volume; respiration 32; temperature 103⅘. Expectorates and perspires very freely. Took six grains of quinine at 6 A. M, and took six grains more at 9:30 P. M. Pulse 96; respiration 36; temperature 104. Six stools since daylight, vomited twice, drowsy, probably from morphine. Fourteen grains of quinine.

March 17th. Pulse 82; respiration 24; temperature 100⅕. Perspires freely. P. M., pulse 72; respiration 20; temperature 98½. Very little expectoration. Prescribed, in addition to the bryonia, the muriate of ammonium and digitalis.

March 18th. Pulse 72; respiration 28; temperature 97. Expectorates very freely. Discontinued poultice and applied turpentine liniment.

March 19th. A. M., pulse 72; respiration 18; temperature 97⅕. From this time on the patient made a speedy recovery.

In this case there was a slight recession towards the end of the fourth day. Whether the disease extended any further after this I am unable to say, because the patient's condition did not allow a thorough examination to be made. All indications pointed in this direction, however. The chief difficulty towards the close of the case was the inability to expectorate the products of the disease freely enough, and to this the prolonged high respiratory rate was undoubtedly due.

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BUTTERMILK IN SICK STOMACH.

By R. J. Peare, M. D., Pleasanton, Kan.

AN IRRITABLE stomach, it will be admitted, is often a most serious complication in the management of sickness. In occasional cases, of no particular gravity otherwise, oftenest in diseases of children, this difficulty leads to a fatal issue. Buttermilk, so far as I am aware, is an untried remedy in such cases. I have had some experience recently with it, quite satisfactory in a few instances. Four cases of persistent vomiting occurring in succession, intolerant of any other treatment, gave way kindly to this.

Case I, was that of a child about two years old. The vomiting was unaccompanied by other sickness. The child had not retained anything, fluid or solid, for two days; the food being almost immediately ejected. I suggested buttermilk in teaspoonful quantities, every ten, then every five, minutes, the milk to be quite cold and as fresh as possible The vomiting did not recur, and in two days the child had changed from a condition of impending death, from collapse, to nearly its normal condition. In place of teaspoonful quantities, the stomach soon sustained larger ones, and so on till an ordinary quantity could be taken.

Case II, was that of a nursing child suffering from a mild derangement of the digestive process, accompanied by fever and persistent vomiting while anything remained in the stomach. The mother's milk was immediately rejected. I again ordered buttermilk, in the same manner as before, much to the surprise of the parents. Next day the father reported that there had been no vomiting from the time this treatment was commenced.

Case III.—This was an adult female. Three weeks before she had been confined, and at this time was suffering from a mild attack of peritonitis, with constipation and nervous troubles. There was constant nausea in this case, even when the stomach was empty—a feature in which it differed from the other three. Buttermilk was cooled with ice, and carefully given in gradually increasing quantities till it was retained quite well, after other remedies had all failed, and in twelve hours it

could be taken freely. The nausea was overcome with more difficulty in this case than in the others.

Case IV, was that of a child one year old and weaned. The mother had been away from home some distance with the child, visiting. While absent, a slight diarrhœa occurred, accompanied by sick stomach. When I saw it the stomach difficulty predominated greatly. Everything given was immediately expelled with force. The mildest remedies were not retained a moment. The stomach was intensely sour, and food taken therein days before was passed from the bowels undigested. Buttermilk, as directed in the other cases, was ordered, with lime-water. The vomiting subsided very quickly, and the stomach could soon tolerate boiled milk thickened with flour. This change became necessary on account of the condition of the bowels, which now became as intolerant of the buttermilk as the stomach had been, the milk passing through immediately after ingestion. After the change of food no passage occurred for twenty-four hours.

Four successful cases will, of course, not establish the value of any remedy, but the recital of them may lead to further trial.

So far as I have observed, buttermilk does not coagulate in the stomach, as does new milk. This is, perhaps, its only advantage over the latter, but one of inestimable value, since the coagulation of new milk casein, so likely to occur, utterly forbids its use in many cases. In the "summer complaints" of children, for instance, buttermilk might be found eminently appropriate.

SALICYLATE OF POTASSIUM IN ACUTE RHEUMATISM.

By E. L. Miller, M. D., Eaton, N. Y.

ON JANUARY 20, 1879, I was called to attend Miss S., aged 23, house servant, health usually good, had an attack, five years ago, of acute rheumatism without heart complications.

Found the patient suffering from acute rheumatism, joints painful and swollen and all of the symptoms usually accompanying a well-marked case of rheumatic fever. Commenced treatment with salicylate of sodium, in twenty grain doses every four hours; at the expiration of twenty-four hours nausea and vomiting supervened, the temperature arose from 102.6° to 104.5°, pulse from 96 to 120; severe headache and drowsiness; tongue brown and dry; these symptoms increasing in severity, the salicylate was withdrawn, and was not again resorted to during the continuation of the disease, which resulted in a good recovery.

On February 15, 1879, a well-marked case of rheumatic fever came under my treatment and the salicylate of sodium was again resorted to, every precaution having been taken to prevent the bad results in the previous case; at the end of about forty-eight hours nausea and vomiting supervened and the remedy had to be withdrawn. As this was an eleemosynary patient, I determined to change the base from a sodium to a potassium salt, which was prepared extemporaneously as follows:

℞. Acidi salicylic.
Potassii bicarb., ää ʒ v.
Aquæ, ℥ ij.
Solve et add.
Tinct. nucis vomicæ, ʒ ij.
Spr. lav. co., ʒ ij.
Syrupus simpl., q. s. ad., ℥ iv.

M. Sig. A teaspoonful every three hours, well diluted.

The effect was marvelous. In twenty-four hours the joint pain had ceased, the temperature had fallen from 104.2° to 99.6°, and the patient made a good and rapid recovery, with the addition of some quinine and salicylate continued *ter in die* after meals.

Since this case the potassium salt has always been resorted to in acute rheumatism, with some modification of dose, and always in my hands with marked success and with no untoward symptoms.

The potassium salicylate has been used in the fermentative diseases of the stomach with good results and marked benefit to the patient.

That the potassium is far superior to the sodium salt in acute rheumatism, is to me a fixed fact, and can be accounted for upon physiological principles. The chief office of sodium in the animal economy is the formation of bile, while that of potassium is the elimination of worn out albuminoid products, especially the results of the metabolism of albuminoids which fall short of the ultimate product urea—which are cast out by the kidneys

KOLA, A PHYSIOLOGICAL AND THERAPEUTICAL STUDY.

By Dr. Leon Ernest Monnet, Paris, France.

Kola is a species of the genus Sterculia, of the sterculiaceæ; botanical name, sterculia acuminata. It grows in Africa, between Sierra Leone and Congo. It is a small tree resembling somewhat the chestnut tree, and may attain from ten to twenty feet in height.

The fruit of the kola (the nut) contains from ten to fifteen seeds, chestnut form, and of variable dimensions. These are red or white; the coloring matter is exclusively in the epidermis. These seeds easily separate into two halves, of rosy or white color. Their substance is composed of cells stuffed with large starch grains, resembling a potato on section. It is in these cells that are found the caffeine and theobromine.

The kola tree bears its nuts when about ten years old; at this epoch a good-sized tree may produce twice a year eighty or ninety pounds of nuts. These are made much use of by the natives, who attribute to them divers medical properties. They are, for instance, properly used for their stimulant, sialagogue and stomachic effect. The Africans chew them much as the Brazilians do coca, and they ascribe to them quite as marvelous virtues. In certain districts of Africa, visited by that daring traveller, René Caillié, he found kola nuts so much prized by the natives as to be used for money. The white kolas were regarded as valuable presents, *i. e.*, between a host and his guest; to send a person red kolas, however, was regarded as an insult. Solemn oaths were in fact made on the kola which was treated as a sort of a fetich.

PHYSIOLOGICAL PROPERTIES.

Among the principles which enter into the constitution of kola nuts, we find caffeine, theobromine, tannin, glucose and starch. Caffeine predominates, and this is its active principle. One gramme (fifteen grains), of kola contains twenty-three and one-half milligrammes, or about two per-cent., of caffeine. There is too little tannin in it to influence a healthy organism. Of theobromine there is scarcely more than a trace; *i. e.*, about two parts in ten thousand.

As a general rule then it may be said that kola produces the same effects, physiologically, as caffeine. At the same time it must be admitted that as a beverage the infusion of kola can never supply the place of coffee, being insipid and almost disagreeable.

Among the physiological properties which we think may properly be ascribed to the infusion, are the following:

1. It produces insomnia.

2. It is an aphrodisiac (Heckell and Schlagdenhauffen).

3. Like coffee, it is an excitant of the intellect and imagination.

4. It restrains tissue waste, being essentially an *aliment d'épargne*. We do not know by what mechanism kola diminishes the combustions of the animal economy without diminishing the vigor of the organism, but the fact is none the less patent. According to Küss and Duval, principles of the order of caffeine favor the transformation of heat into force, and enable the organism to use to better advantage the true alimentary substances previously ingested. We do not know whether this be the true explanation, or whether, according to Mangazza, they act simply by hyperexcitation of the nervous functions—whence the name which he applies to them, *nervous aliments*. It is certain that, although containing a small percentage of nitrogen, they are not utilized as food, but traverse the organism without undergoing decomposition.

5. It appears, from careful observations of my own, that kola is diuretic. This might have been anticipated, from the fact that caffeine is diuretic. Moreover, there is the same energizing of the heart's action and increase of vascular tension which attends the use of caffeine. Yet, while the effects of these are so near alike, I am inclined to think that kola is the more energetic of the two, and that its effects in raising the blood-pressure and regulating the cardiac pulsations are decidedly more pronounced than those of caffeine. In a little work published by me last year are recorded numerous physiological experiments made by me to determine the action of kola on the vascular system. I there showed by sphygmographic tracings that, in both cold-blooded and warm-blooded animals, subcutaneous injections of a certain number of cubic centimeters of an infusion of 20 grammes of kola in 20 grammes of water raise the vascular tension—with, however, this difference, that in frogs this increase of tension is accompanied by slowing of the heart's action, while in warm-blooded animals (dogs) there is augmented rapidity of the pulsations. But augmentation of tension and acceleration of the heart's beat seem to be antagonistic phenomena, as the law of Marey affirms. This eminent physiologist

has laid down the principle, that the heart beats the faster the less resistance it meets in emptying itself; in other words, the heart slows its action when there is augmentation of tension. In the frog, this law finds verification; in dogs it has, in my experience, yet to be verified. This law, to do justice to the principles which it enumerates, is a law made in virtue of immutable physical principles, but which takes no account of the nervous system and its influence, which is almost nil in the frog, but much more considerable in the dog, and greater still in man. These conditions, then, of excitability of the heart of the warm-blooded animals, do not allow us rigorously to accept Marey's law, and the contradictions of my experiments are more apparent than real.

The physiological effect of kola on the muscular system seems to be of the nature of lessening excitability. By experiments made with Marey's myograph on various muscles, such as the gastrocnemius, I have constantly obtained a diminution of contractile energy; and this did not seem due to the exhaustion of the animal, for in the limb which was ligatured, and thus removed from the sphere of action of the medicament, the contraction of the gastrocnemius was still very powerful.

THERAPEUTIC APPLICATIONS.

In seven cases, of which I have elsewhere given a full report, and which came under my personal observation, kola proved of marked benefit in strengthening the weak heart, augmenting the general blood-flow and vascular tension, and promoting diuresis. In some of these patients the urinary excretion was increased from a pint a day to two, two-and-a-half and three quarts. So gratifying, in fact, were the results that we might say of kola what Dr. Dujardin-Beaumetz says of caffeine, that "in the last stages of cardiac affections" kola "sometimes works resurrections." We should bear in mind that besides the caffeine which it contains, kola possesses nutritive and tonic principles which are carried to the badly irrigated, badly nourished tissues, revivifying the organism. Besides the benefit which kola confers in heart affections, I have observed gratifying results from its administration in cephalalgia. By this I wish to be understood as meaning iodiopathic cephalalgia, due to a circulatory disturbance, and not to an organic lesion. In my report will be found two cases of the kind.

Nervous Troubles.—Here I have only to refer to the use of kola in disturbances due to want of proper sanguineous irrigation of the cerebro-spinal centres, or to troubles connected with the debilitant effect of certain cachexias. Caffeine and the tonic principles of kola by adding their reciprocal actions, and individual potencies, may serve a good therapeutic purpose in these nervous difficulties. Even in nervous derangements, due to digestive disorder, kola is not altogether without efficacy. Kola is, in fact, gently aperient, and stomachic.

General Diseases; Grave Fevers.—By the fact that it energizes the circulation and sends more blood to the tissues, kola promotes the repair of the organism, the nutrition and reconstruction of the histological elements. It is also, as I have before said, a restrainer of waste; it thus unites in itself two valuable remedial properties: that of a tonic and that of a moderator of denutrition (*anti deperditeur.*)

In my thesis I have reported seven cases where kola was used in the treatment of chronic diseases, and in convalescence from grave fevers, when it seemed markedly to favor organic restitution.

There is one property belonging to this medicament which deserves to be especially insisted upon, viz.: its efficacy in the treatmeat of diarrhœas. Drs. Durian and Cunio have both reported cures in rebellious diarrhœas under its use. Dr. Dujardin-Beaumetz has also noted its value in intestinal fluxes. What is the *modus operandi?* The tannin which it contains is in too small quantity to be of much account. The good results obtained can hardly be due altogether to the action of caffeine on the intestinal capillaries. Dr. Cunio's observations were principally relative to the intestinal fluxes of tuberculous subjects. In my own observations at the military hospital, at Lille, I found it beneficial in one inveterate case, where the ordinary astringents had failed. Dr. Durian employed it with success in one case of sporadic cholera, and Dr. Huchard has used the various elixirs and the wine of kola in undoubted cases of cholera with some benefit, though he does not assign to the new medicament the rank of a curative agent.

CONCLUSIONS.

1. Kola, by the caffeine and theobromine which it contains, is a tonic of the heart, whose pulsations it accelerates, while it increases their power and regulates their contractions.

2. In the second phase of its action, it becomes, like digitalis, a regulator to the pulse, whose energy it raises; under its influence the pulsations become more ample and less numerous.

3. As a result of its effect on the vascular tension, diuresis augments, and this fact renders it valuable in affections of the heart with dropsy.

4. It seems to result from my observations that kola, while energizing the cardiac contractions and promoting the contractility of the muscles of organic life, has, nevertheless, a paralyzing influence on the striped muscles when employed in toxic doses.

5. It is a waste restrainer, diminishing the losses of the economy from the combustion of the azotized compounds; probably from a special action on the nervous system.

6. It is a powerful tonic by the principles which it contains, and its employment is indicated in anæmias, in chronic affections of debilitating character, and in convalescence from grave fevers.

7. It favors digestion, probably by augmenting the secretion of gastric juice (eupeptic influence), and by acting on the unstriped muscles of the stomach which it tonifies. Under its influence anorexia disappears, and the digestive functions become more regular.

8. Lastly, it is an anti-diarrhœic medicament of great value, and as such has rendered good service in chronic diarrhœa, and in certain cases of sporadic cholera, although its action in these instances may not as yet be clearly explained.

PREPARATIONS.

Tincture of Kola:

Take of pulverized kola nuts, 1 part.
Alcohol (at 60 degrees), 5 parts.
Mix. Macerate a fortnight and filter. Dose, a teaspoonful, frequently repeated.

Wine of Kola:

Take of dried and pulverized kola, 1 part.
Wine, 10 parts.
Mix. Macerate a fortnight and filter. Dose a teaspoonful.

Extract:

Take of kola nuts, dried and pulverized, 100 grammes.
Alcohol (60 degrees), a sufficient quantity.
Mix and exhaust by displacement. Distill off the spirit and condense the extract in a sea-water bath to the proper consistency. To produce a SYRUP from the above, instead of condensing to a solid extract, add syrup q. s. to obtain 1 kilogramme of the product.

Pills:

Take of alcoholic extract of kola, 2 grains,
Powdered kola, q. s. to make one pill.

Alcoholature:

Take of fresh bruised kola, 1 part.
Alcohol (at 80 degrees), 5 parts.
Mix. Macerate 15 days and filter.

Elixir:

Take of the alcoholature of kola, 1 part.
Syrup, 1 part.
M. S. A. This is an elegant preparation.

Saccharum Kolæ:

Take of fresh kola, 1 part.
Pulverized white sugar, 2 parts.
Mix. Bruise together in a mortar, pass through a fine sieve, and dry thoroughly.

Pastilles:

Take of saccharum kolæ, 100 grammes.
Gum tragacanth, 1 gramme.
Distilled water, 6 grammes.
Essence vanilla and wintergreen, q. s.
M. F. S. A. pil. No. C.

DOSAGE.

Tincture of kola—One to three teaspoonfuls.
Pills—Five to fifteen a day.
Alcoholature—A dessertspoonful to a tablespoonful.
Elixir, Wine and Syrup—One to four or five tablespoonfuls a day.

NITRO-GLYCERIN IN THE COLD STAGE OF INTERMITTENT FEVER.

By Charles Weil, M. D., Buffalo, N. Y.

ARTICLES on the therapeutic uses of nitro-glycerin, or glonoinum, have been quite numerous since its revival and application in disease, angina pectoris in particular, in which affection it has been used with remarkable success since its first employment by that distinguished investigator, Dr. Wm. Murrell, of London. (See *Lancet*, 1879, vol. 1, pp. 81 and 225.) But in no article has the writer seen it recommended as a prompt and efficient remedial agent in the cold stage of intermittent fever, which it cuts short at once, as does morphine, for instance, or chloroform.

I have employed it for this purpose in four different cases so far, with the desired result in each one, and without any unpleasant effect, aside from a little ringing or buzzing in the ears, which, as we all know, is part of the physiological action of this agent. The last case in which I used it, was that of Mrs. L. F. G., a stout, married lady twenty-six years of age. Under the greater part of the house in which she resides there was a pool of water prior to the sewerage which has since been laid in the

street. I was hastily summoned at about half past seven o'clock in the morning of November 30th, last, and found her covered with blankets, and with chattering teeth, in the cold stage of an intermittent fever. I gave her a hypodermic injection of morphine which almost immediately cut the attack short. As she could not take quinine in any form, on account of an annoying eruption it would produce, I placed her on liquor potassii arsenitis, gtt. iv, *ter in die*. But this did not act as quinine would doubtless have done, for between three and four o'clock on the following afternoon she had another attack, which was again relieved by the morphine. After that, she was free from all attacks until the sixteenth of last month, when I was again hastily summoned. I took with me my one-per-cent. solution of nitro-glycerin, and dissolving gtt. ii, in aquam xv, injected the whole into her arm. It acted as promptly and as efficiently as it did on the previous occasions, or as morphine did.

I would recommend, however, that only one drop be used, instead of two, unless the condition and nature of the patient would warrant more. I would also state that I greatly prefer the solution to the pills which some of the manufacturing druggists have placed on the market; the one-per-cent. solution in alcohol or ether being the most advisable.

My object in writing this brief article is to call attention to this additional property of glonoin, which the few cases mentioned justify me in claiming for it.

561 Genesee Str.

COCA AND COCAINE.

By Laurence Turnbull, M. D., Ph. G.*

I have employed the coca and found it useful, first in my own case; also in that of several of my patients. The effect of my experiments with the elixir and fluid extract of coca in full doses was a somewhat irregular muscular action or coördination, and if given in large doses, irregularity in walking. Soon after the moderate dose there comes a feeling of comfort, and as the effects pass off there is a slight irregularity of the rhythm of the heart; this is followed, after a certain time, if taken at night, by a pleasant sleep. If taken through the day and not immediately before meals by a person with no desire for food, or if taken after meals, the effect passes off before the next regular meal and the appetite is not disturbed. The wine was the first preparation recommended me, but after using that made in this city with sherry wine, I found it objectionable to certain of my patients, causing headache and dyspeptic symptoms; so I then resorted to the elixir and fluid extract and an alkaline infusion, which has been so far satisfactory, except in the case of the extract causing constipation. I have since extended its use to ear cases with subjective aural sounds, as in the peculiar form of ear disease described by me at the last clinical meeting of the Philadelphia County Medical Society, from pressure affecting the labyrinth, first upon the membrana tympani and handle of the malleus extending to the stapes and fenestra ovalis, and also from other causes; such as shortening from contraction of the tensor-tympani; or in irritation of the pharyngeal mucous membrane propagated through the Eustachian tube to the midde ear; or from spasm of the muscles, or temporary hyperæmia. It would not permanently remove these sounds, only relieve them in intensity, especially if from tympanic adhesion or anchylosis of the joints of the ossicles of the ear. The second case I tested the coca upon, was a delicate married lady, Mrs. H., aged thirty-eight, who suffered with congestion at the base of the left lung, with cough and hoarseness, and relaxation of the vocal cords, impaired digestion, and poor appetite. She had employed an inhaler with various agents, also counter-irritation with iodine, and for a month was treated with quinine and iron with no good results. Coca was prescribed in the form of wine, a tablespoonful after meals; after a few weeks use great improvement was noticed in her voice and general condition. The feeling of great weariness and exhaustion, with cough, disappeared; she has now and then to resort to it for a short time, but always with decided benefit.

The wine used by this patient most of the time was made by Caswell, Massey & Co., of New York.

Another case similar to this was Miss M. K., who suffered from deafness, noises in the ear, loss of voice and hyper-secretions in the larynx and pharynx. She had paresis of the soft palate, so that when Dr. Stern and myself attempted to use the laryngoscope, the velum and soft palate would drop down and interfere with the examination. Two ounces of the fluid extract were ordered and obtained from the pharmacy of Jefferson

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Medical College Hospital. She took this preparation in doses of sixty drops three times a day. One week after, she reported the noises were much less, throat less irritable, and we were able to obtain a view of the vocal cords, which were found white but still somewhat relaxed in the act of phonation. The only objection to the continued use of coca in this form was the constipation. This constipation, it is stated by my patients, does not follow the use of the elixir, wine, or the lime-water infusion. Still the peculiar tannin which it contains is one of its important agents, and should not be omitted, as it unites with the active principle; therefore it is best to use the active preparations, for the constipation can be readily obviated by adding a mild laxative.

In my observations of a number of minor surgical operations on the ear, etc., with the use of the new anæsthetic, hydrochlorate of cocaine, I have felt pleased with its action on mucous surfaces, but disappointed in its use on the skin of the meatus (except hypodermically). I employ a four-per-cent. solution on the mucous membrane of the lip and it produced the same feeling as if burned with hot coffee; and when applied four times at short intervals and kept dry, it prevented the disagreeable sensation produced by the appliion of pure chromic acid to a suspicious growth, as in the following case:

Case 1.—December 3, 1884, D. C. M., West Virginia, applied with a history of acquired syphilis by inoculation several years ago in the finger from an obstetric case. There were two points of ulceration of the mucous membrance of the naso-pharynx one-and-a-half inches above the edge of the soft palate, and one behind the right tonsil, with enlargement of the gland and discharge of pus. After drying the parts with absorbent cotton, I introduced a four-per-cent. solution of cocaine up and back into the point of ulceration, and then applied the crystal of chromic acid to the first ulcer without causing the slightest pain.

December 4. After cleansing, again applied the solution, and introduced my delicate Eustachian forceps with a pledget of cotton wool, charged with pure powdered sulphate of copper to the second ulcer, which bled on being touched, but without giving the patient any pain.

December 5. Made a third application with more freedom; no blood followed, and he stated he had seen no pus since the first application.

More recent information, and various trials made by myself and others, have caused me to modify my opinion in regard to the use of a hot four-per-cent. solution of the hydrochlorate of cocaine in relieving pain in the ear.

It is a well-known fact that just prior to perforation there is an elevation of the cuticular layer with a softening process whereby any liquid applied to the right part might pass in by imbibition, and influence the sodden layers of the membrana tympani, and if it had anæsthetic properties, would also impress the branch of the chorda tympani nerve and relieve pain.

Case 2.—November 20, 1884, G. B. M., M. D., applied for deafness in both ears, but especially the right. On examination found the sides of meatus and lumen filled with separated masses of scales several millimeters in length, firmly attached to the parts, which, on removal by the forceps, gave him great pain. He also found the pressure of the ear speculum painful. This was explained after the removal of a portion of these diseased scales by finding the under surface inflamed, reddened and ready to bleed at the slightest touch of the instrument. To obviate this pain and allow the entire removal of this desquamated material, a four-per-cent. solution of hydrochlorate of cocaine was instilled into the ear every five minutes, for fifteen minutes. At the end of this period, I again began removing the offending material without so much pain: still it was not a true anæsthesia, and if I made strong pressure with the speculum in introducing it, it also gave him slight pain; still he was able to bear it much better with the solution, until all was removed from the right ear. He was then directed a sol. zinci sulpho-carbolatis, gr. iv; morphinæ sulphatis, gr. i; aquæ distillatæ, ℥ iv. For the left ear, after the use of the forceps, gave an alkaline solution to drop in ten drops three or four times a day, and rest for fifteen minutes so as to remove what scales were on the M. tympani.

November 23. Washed out the remaining scales, and inflated the middle ear with great improvement of hearing in both ears.

Case 3.—November 25, H. F. M., aged 29, bank clerk, suffering from deafness and constant "rattling or buzzing," from congestion and hypertrophy of the pharyngeal tonsils and mucous membrane of the post-nasal spaces, which required cutting freely with a tenotomy knife. Before doing so I applied a four-per-cent. solution of the cocaine, and

although I made five different incisions into the enlargement, he was not aware that it was accomplished until he found a few drops of blood passing into his œsophagus. One week after he reported by letter of improvement in hearing. In this operation not one-fourth the amount of blood was lost as in such cases without the cocaine, the parts remaining quite rigid for some time after the operation.

CASE 4.—November 29. Applied the four-per-cent. solution to a lady suffering from excessive secretion of glands of the throat, and passing into the Eustachian tube, causing noises of a variable character. She suffered also from swelling and hypertrophic conditions of the posterior portion of the nasal mucous membrane and turbinated bodies. The parts were cleansed with spray of Dobell's solution, and after passing a strong current of dry condensed air through to free them from moisture, a flexible silver catheter was introduced, first into the right side of the nose and a nozzle was fitted to it, and then the elastic tube of the condensed air chamber, and a few drops of the solution of hydrochlorate of cocaine were introduced into the catheter, and the parts sprayed by forcing the air through it. In the same operation performed upon the opposite ear, there being a deviation of the septum, there was more pain, but very much less than when we introduced the instrument before. The spraying was repeated for three different times, when in about ten minutes she felt the peculiar apparent swelling and drying effects, and great relief from the noises, by the freedom with which air passed through the Eustachian tubes. The lady reported, a week after, improvement of hearing and more freedom from the noises.

Desiring a more glutinous solution of the hydrochlorate of cocaine than that in water, which would adhere to the surface of the tissues, and not pass into the stomach, Dec. 22, 1884, I had two solutions in glycerin of the hydrochlorate of cocaine made for me; one by Wyeth and Brother, and the second by Eisner & Mendelson, which answered the purpose very nicely. I also received from McKesson & Robbins, of New York, an oleate of cocaine (5% of alkaloid), and have employed it with success in ear, skin and throat cases, when mixed with lard oil equal parts of each, which with heat, makes a perfectly homogeneous preparation and is absorbed. I have obtained good results with their muriate of cocaine in crystals when mixed with a very finely powdered gum Arabic, one to two grains in forty-nine, as a snuff to the nostrils in coryza, or mixed with powdered boracic acid blown by a powder insufflator to the mouth of the Eustachian tube, as in the following case:

CASE 5.—Case of intense hyperæmia of the membrana tympani, and pain in the mouth of the Eustachian tube, relieved by the use of powdered hydrochlorate of cocaine and boracic acid. Miss K. E., aged 30, a very nervous lady, suffering with pain in ear from acute myringitis, applied for relief March 4, 1885. The inflammation had caused swelling of the epidermic layer, involving the deep-seated membrane, even the drumhead. The pain was intermittent, shooting, extending to the throat. She had also tinnitus, and throbbing; the injection of the membrane near the manubrium was unusually vascular. Treatment: A four-per-cent solution of cocaine hot was dropped into the ear, and in two minutes the pain, she said, was less, and in ten minutes she stated the pain was gone, but not from the throat. Powdered hydrochlorate of cocaine and boracic acid were then blown over the surface of the Eustachian tube back of the palate, and the fine spray came out of the nose. In four minutes she stated the pain was entirely relieved in the throat.

In conclusion I would refer to Dr. Kœnigstein, who, after numerous experiments,[1] thinks that the anæsthesia of the conjunctiva and cornea with the tension of the eyelids, and the slight protrusion of the eyeball, as in Graves' disease, are mainly due to the influence of the cocaine upon the sympathetic, and the fact that the vessels generally, including probably those of the retina, are contracted by it, and the pupil is dilated, would give some warrant for the belief.

These conclusions of Kœnigstein, the writer of this paper,[2] do not agree with the results obtained by "Nikolsky,[3] who found that the pupil is still dilated by cocaine after section of the sympathetic." It is, therefore, inferred that the drug does not act upon the iris through that nerve.

[1] These experiments were made independent of Dr. Koller, and read before the Vienna Society of Physicians, on October 17, 1884, and published three weeks later in the *London Med. Times*.

[2] The THERAPEUTIC GAZETTE, Jan. 15, '85, p. 46.

[3] The New Local Anæsthetics, p. 9. By Laurence Turnbull, M. D., pp. 76. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut St. 1885.

RETROSPECTIVE AND PROSPECTIVE THERAPEUTICS.

By A. G. Huston, M. D., Pendleton, Ind.

WE judge of the future of a nation by its rise, progress, and the principles by which is governed.

The same law holds good in the examination of corporations, fraternities and individuals, and is no less applicable to the practice of medicine; and we desire to take a retrospect of the practice, and with mental vision to look down through the coming days, and to predict the future, if not with unerring precision, with approximate certainty.

It is scarcely necessary to refer to the mythological days of practice, when the afflicted were supposed to be possessed of evil spirits which had taken possession of the unfortunate victims to torment and afflict them, and when incantations and charms were resorted to, with the hope of securing the departure of the troublesome spirits, and the restoration of the sufferers.

Later we find the minds of the people inured with the idea that disease is a real entity, a monster, possessing the human body to rack it with pain, and scorch it with fever; and this ignorance led the medicine man to administer to his patients some agent that would affect him positively, without any knowledge of its true therapeutic value, with the hope of driving the monster from his hiding place or destroying him in his lair. This led to the employment of large doses of the most virulent poisons found in the vegetable, animal and mineral kingdoms, which only increased the sufferings, and oftimes caused the death, of the patient. But, in later days, as the sciences of anatomy and physiology were being unfolded, the idea of disease being a real entity vanished, but not without leaving a stigma upon the practice, the influence of which is felt to this day, and will be felt for ages to come.

As the knife opened to view the true condition of the human system, and enabled the investigator to have, at least, a vague idea of the action and use of some of the prominent organs, his mind was led to observe the changes wrought by disease, and, step by step, the foundation principles of a true practice were laid. Anatomy, physiology, pathology, chemistry, microscopy, and kindred sciences have subserved the use of the anatomist, physiologist, and pathologist, until the minute portions of the body are being examined, their action observed, and their part in the animal economy to some degree understood. When the germs of disease fasten upon the body the organs are again examined and their conditions compared with the symptoms presented in each individual case, until diagnosis is becoming one of the certainties of the progressive physician. The coated tongue, the aches and pains, the irritable or moody mind, etc., are guide-boards that point out to him with unmistakable certainty the true condition.

But the knowledge of anatomy, physiology, and pathology was insufficient at the bedside to relieve the agonies of the Herculean frame, or mitigate the sufferings of the puny infant, and the building of a superstructure became necessary. That superstructure was therapeutics, and the base and superstructure have been simultaneously developed through the investigation, application, and promulgation of the progressive physician who has studied with unceasing efforts and untiring devotion, the human organism in its construction, and action in health and disease, and noted carefully the effects of agents administered and thereby discovered the influence of the different agents upon the system. And it was found that while some influenced the alvine canal either to increase or diminish its action; others made a like impression on the kidneys, skin, liver, etc., and from these facts remedial agents were classed into tonics, expectorants, cathartics, diaphoretics, diuretics, etc. This was a grand accomplishment thus far to classify the remedial agents. But observation discerned the fact, that, after the administration of certain agents, and their manifest results had been secured, the system suffered deleterious influences, and the work of selecting the better from each class then became an important work with the faithful advocate of progress that the practice might advance, and therapeutics be placed upon a higher plane. Years were spent in thus far developing the science of therapeutics. But, as the progressive mind never reaches a point at which it rests, this classification did not satisfy; for, when in the physician's judgment a cathartic was indicated, a diaphoretic needed, a nervine required, or an anti-periodic wanted, and one administered, it was found in many instances to be ineffectual, and the relief expected was not obtained.

These failures led to closer observation, and developed the fact that one hepatic, diaphoretic, diuretic, tonic, etc., acted more

promptly and gave relief more certainly in some cases, while another, of the same class, was more beneficial in other cases; and, that an agent that would act as a diaphoretic in one case would not so act in another, and that what was a febrifuge in one condition was not in another. Thus through the whole catalogue of conditions and remedies it was found to be necessary to note more carefully the symptoms, and to observe more closely the remedies that relieved these symptoms, and to note carefully the conditions that were met by certain agents. The progressive physician of to-day does not inquire after diuretics, tonics, cathartics, and nervines, but, what agent will relieve this condition, and what symptoms will indicate the use of that agent.

There was a time, but a few decades past, when the allopath, with his lancet, calomel, and quinine, expected to relieve suffering humanity from the pangs of disease, of every name and order.

The eclectic, with whatever he might think best to cleanse and tone the system; the Thompsonian, with an emetic, a cathartic and a bitter tonic; the hydropath, with his ice and boiling water; the homœopath with water impregnated with the shadow of some therapeutic agent; the electrician with electricity, without regard to condition or kind of current, attempted to do the same. But is it so to-day? I answer no. Why not? Because, when we look down the line into the dim distance of the past, we see standing in advance of the rank of physicians, men, here and there, who have labored for the advancement of truth, and not for the building up of a college, system, or pet theory. Their innovations were strongly opposed by the masses, but when founded upon truth they would eventually rise above every position, and take their place in the temple of science and add another stone toward the completion of its structure: but if they rested not on truth, they at least *excited* a spirit of investigation that developed new truths, or embellished those already brought to light. Truth is the philosopher's stone that turns everything into gold. If it be not a positive benefit, as a negative, its avoidance may be of incalculable value.

The progressive mind has never reached that point where it could not view in the dim distance, unexplored fields, or undeveloped truths. And hence, the progressive physician who took up the work of his predecessor, was not satisfied with what he called success, but desired something better. He started upon the plans of his predecessor, but gradually rose by the efforts of his own active mind and irrepressible will, despite the opposition to his many innovations and to his untiring efforts so to associate conditions, symptoms and therapeutics, as to avoid those unscientific prescriptions containing numerous agents like unto those found in many of our medical books and journals, samples of which may be found in *Physio-Medical Journal*, vol. IX, pp. 47–48, eleven agents prescribed for diphtheria, by M. Veenboer, M. D.

Same volume, p. 254, twelve agents, and dry cupping, for dyspepsia, by Wm. Tait, M. D.

Volume X, pp. 15–16, six agents and one compound (number of agents not known), for hepatic engorgement, by E. Anthony, M. D.

THERAPEUTIC GAZETTE, vol. IV, p. 139, eleven agents for gonorrhœa, by Alfred Fliesburg, M. D.

N. Y. Eclectic and Surgical Journal, vol. IV, pp. 200–201, fifteen agents for acute rheumatism, by Eli G. Jones, M. D.

We have all seen physicians who, if called to see a lady suffering with pain in the back, head, and stomach, would look very wise, and after a critical (?) examination, would disclose the important fact that the woman had rheumatism in the back, *neuralgia* in the head, and inflammation of the stomach; and would prescribe a good liniment for the back, a hypnotic for the head and an antipyretic for the stomach. Or possibly he may be one of those M. D'.s that do business on general principles, and after a few general questions and a knowing look, he says, "madam, you are out of fix all over, and it will take vigorous treatment to restore you;" but with much assurance he prescribes a thorough emetic, or a vigorous cathartic, to arouse the system, when the real seat of the trouble is in the genital organs to which remedial means should be directed.

It could scarcely be expected in the present chaotic state of therapeutics that we should always be able to prescribe one agent with success. But it is expected of every truly progressive physician that he do something to hasten the time when the practice will be predicated upon facts, and not upon theories; to speed the day when every physician will not strive to perpetuate the tenets of his own schools, but seek for truth to ennoble the profession and exalt the practice. He is expected to reach down into allopathy, ascend into homœopathy, and gather all the truths possible between these extremes, place them

side by side, and prize them equally, regardless of their previous surroundings, conditions or family relations, because truth must prevail. What the medical profession needs to-day are men that will think, investigate, and experiment for themselves, and when they have evolved a truth, or what they believe to be such, promulgate it and let others verify or disprove it: and when it has been disproved, or something better proposed to take its place which has been verified by experience, to be willing at least to admit it upon trial, and not prejudicially condemn it because it came not from an avowed leader, or came from the threshold of an opposing faith. This course, as well as the result of some of the investigations, may be in advance of the day in which we live, and therefore be unpopular and bring upon the progressive mind the denunciations of the profession generally. But if reason, common sense, and observation decide it to be right and the truth, stand firm though you may be paraded before the world for what is looked upon as wild speculation or reckless experiments, as in the case of Dr. Murrell to-day and many others in days past. Or the truths brought to light may not be accepted at first, as in the case of Harvey and Jenner. But with care in experiments, not to endanger life or induce or prolong suffering, step by step we will bring the practice to a more scientific basis and a more successful administration.

There are two extremes in practice. One is, not to do enough; the other is, to do too much. The high-dilution homœopath has such implicit confidence in his mode of practice that any innovation or deviation he would consider a hindrance to his success and a stain upon his professional dignity. The heroic allopath and the confident eclectic have such unbounded faith in something that will positively impress, oft repeated, that to deviate would be contrary to the teachings of the fathers, and a stain upon the code. The old-line physio-medicals have such a reverence for the fathers, and such a horror of poisons, that to use anything that would be *injurious* in less quantities than a quart would be heretical. And thus we find each school of practice clinging closely to the tenets of their fathers, and believing, with undaunted faith, that the Alpha and Omega of medicine rests within their respective domains, and that it is folly to look beyond for anything that will advance, beautify or ennoble the practice.

Ofttimes in the intercourse of physicians it is found that some are ignorant of the principles, practices and teachings of other schools except their own, but claim a superiority for their respective branch, and denounce invectively all others. Again, it is found that invective and denunciation are indulged in to stigmatize a successful rival, whose ardor for investigation and truth has surrounded him with a successful and lucrative practice, instead of doing as the Philippian jailor when he viewed within the prison the manifestation of a superior power, to him unknown, inquire, "What shall I do to be saved?" And then, with that spirit of obedience that characterized his sincerity, go forth as directed, when Paul said, "Repent and be baptized;" repent of our lethargic folly, and be baptized with that spirit of investigation which is striving for something higher and nobler, not seeking for the defects of others and the aggrandizement of self. Why cannot the minds of the medical students be freed from the trammels of schools, societies, and sectarianism, and as free to search after the truths of therapeutics and practice as the mind of the astronomer, chemist, microscopist or anatomist? When these scientists announce a discovery in their respective branches, a special effort is made to verify or disprove it. If verified by a number, it is put upon record as a fact, and regarded as such. If disproved, it receives no consideration. These trammels are doing much to impede the progress of therapeutics. When we pass into the college halls of the different schools, we find them teaching their respective theories and a practice to accord therewith, and impressing the minds of their students with the fact that their own school is in advance of all others that are trying to steal from them what will give them success, but which is to be found only by adhering strictly to their respective teachings: and that safety is known only so long as they follow in the footsteps of their leaders. But when the student completes his college course, and with diploma in hand, leaves the portals of his alma mater to take upon himself the duties and responsibilities of a practitioner, he does not meet with that success in many cases that he expected from the assurances that were given him during his college days. If he is loyal to his fraternal ties, he peacefully rests in the assurance that all has been done that can be, and that nothing will afford relief but death. But the progressive physician says, "Is there not something that will give relief?" And with this idea in mind, he institutes his research; he peruses page

after page of books of different schools, he scans the medical journals of diverse faiths: he finds strongly recommended a successful treatment for a case in hand, he hears the laudatory praise of some unfellowshipped physician in favor of the same and with doubts, fears, and the code staring him in the face he ventures a trial, the result of which is success. Other trials confirm his hope and and strengthen his faith, and add new truths upon which he bases his practice.

Now there are two courses pursued when this point is reached. Some, fearing the restraint of societies and the disfavor of their would-be leaders, know no bounds in practice, but are very careful never to speak favorably of anything that is not in conformity with college teachings and the accepted ideas of their own school: while others come forth disregarding all things save the convictions of an investigator and a devotee to science, and promulgate the results of their investigations, and the success of their research. But it is evident that there are more of the *latter* class to-day than at any time in the past, and that many are willing to risk their professional standing by the advocacy of a course which can be no other than right, and will grow into favor, and do much to advance the science of therapeutics. Accost any practitioner concerning investigation and the appropriation of every good therapeutic means, and he will assert it to be the duty of every physician; but *carry* your inquiry a step farther. Ask concerning a specific agent in relation to a specific condition other than that taught by his respective school, and you can easily and quickly decide whether that man be free from the yoke of party and the halter of sectarian bigotry. If he replies, "No, sir! that belongs to a school of medicine in which I do not believe," be assured he has the halter on, and the strap securely fastened at the other end to some medical society or college fraternity.

We have already alluded to the basing of practice on theory, which, to a great extent, is responsible for the failures in therapeutics. A college professor or book-writer secures some pathological tissues or substances and subjects them to a microscopical and chemical examination, and finds certain elements abundant or wanting, or discovers bacteria, micrococci, or vibriones. He then places the human system on the same plane as the laboratory in which he works, and logically concludes that he must supply the lacking element, or he must find one that will unite with the one in excess and reduce it in amount, or add to the deficient one by forming an element like thereunto. Or, after subjecting the bacteria and vibriones to different agents to ascertain which destroys them most readily, the laboratorical conclusion is that the administration of this same agent is necessary, or is at least the best thing that can be done to remove the pathological condition.

It may be some specialist has thought to examine bioplasm, and test its vital energy, by administering to it certain therapeutic agents, as pabulum, and has found that some agents increase its activity, some lessen, and some destroy it, and from these facts he has thought to establish proper therapeutics.

These investigations are not to be discouraged, but must be made to subserve a nobler purpose than speculative therapeutics. Facts are better than all theories. When a person is found to be ailing from a pathological condition, it may be well to know the chemical composition of the diseased tissue or substance, or to know the species of the micrococci; but what is of vastly greater importance to the physician is to know what he can give his patient to mitigate his suffering and restore him to health, although it may not be in accordance with the theoretical prescription to suppply the wanting elements, destroy the micrococci, or administer a suitable pabulum for the bioplasm. Yet, the *fact* that the prescription is suitable to remove the disease is worth more to him in practice than volumes of *theory* on elements, bacteria and bioplasm. Clinical experience is the true source of therapeutics. When the physician approaches the bedside of the sufferer, he does not stop to inquire what elements are lacking, what kind of bacteria have I here to destroy, what will be suitable pabulum for the bioplasm? but what can I give my patient to restore him to health?

What is now necessary to the securing of effectual therapeutics is for the profession to be thorough in examinations, carefully noting the symptoms before and after the administration of such agents as the experience of the past, the knowledge of the present, and the research of the future, have decided and may decide are best suited to relieve, and restore to health in the best possible manner and the least possible time, afflicted humanity. Whether the agent be strong or weak, concentrated or attenuated, the dose large or small, the time long or short; whether it operate upon the law of contrarii contrariis curantur, similia similibus curantur, or, vis

preservatrix curantur, so the objective goal is reached, curantur.

The chain of prejudice will be broken, the galling yoke of codes be unknown, the cloud of sectarian bigotry will disappear, and the sun of progress will rise above the horizon of speculative therapeutics and advance to its noonday glory, shedding forth such a developing power as to produce one grand army of practitioners, who shall hold in their hands the wand of healing, quickened by effectual therapeutics, to bring gladness to the heart of nations and consolation to the afflicted millions.

MEDICO-LEGAL NOTES.

By Henry A. Riley, Esq., New York.

THE latest volume of New York Law Reports contains an interesting case, showing the proper limits of expert testimony.

The case was that of a child injured in an accident on the New York, Lake Erie and Western Railroad, and testimony was given on the trial showing the possible future consequences of the injury. This testimony was held to be improper by the Court of Appeals, and the judgment reversed. The Court held in the opinion: "Consequences which are contingent, speculative or merely possible, are not proper to be considered in ascertaining the damages. It is not enough that the injuries received may develop into more serious conditions than those which are visible at the time of the injury, nor even that they are likely to so develop. To entitle a plaintiff to recover present damages for apprehended future consequences, there must be such a degree of probability of their occurring, as amounts to a reasonable certainty that they will result from the original injury."

The testimony which was thought improper by the Court was given by Dr. E. C. Spitzka, the well-known expert in such cases, and was given in response to a hypothetical question. He said that the points of the question proved epilepsy, while the symptoms given by the patient himself left that matter open, leaving it either as a preliminary stage of epilepsy or meningitis or traumatic dementia, the witness could not decide which. He further said that the condition of the boy was very likely to be permanent, and in response to the question as to what he meant by "very likely," he said: "I mean that the boy will always have some remnants of this injury, some reminder of it, great or small, that is certain; how much he will retain I cannot tell, but I think it very likely he will retain some." Further discussion then occurring between the counsel as to the "very likely," Dr. Spitzka said that the boy was likely to retain the greater part of the symptoms, if he did not develop worse signs, and when asked what he meant by "worse signs," said: "A patient sustaining such injuries and presenting such premonitory signs may develop traumatic insanity, or meningitis, or progressive dementia, or epilepsy with its results." This testimony the Court held to be improper, as opening the door for all possible inferences on the part of the jury, and tending to probable extravagant estimates of harm, and a new trial was therefore granted. The case is of interest, as showing the carefulness with which evidence must be given by medical experts, when future consequences of an injury are under consideration.

The "Faith Cure" institutions deserve the attention of the courts, and in one instance, at least, seem likely to secure it. In a Denver (Col.) asylum, where this method of treatment is the only one allowed, three deaths have occurred since Christmas, and the grand jury in that city has recommended that the institution be forcibly closed. Action does not seem to have been taken, however, as yet. In St. Louis there is a similar institution, filled with children, and only prayer is permitted in cases of sickness. In several cases this, or nature, effected cures, but in one the child died in agony, without any sort of medical attendance. The asylum has only been established some three months, but that seems to many people too long a time.

The New York druggists are proposing to make a test case to determine the constitutionality of the law which requires them to take out licenses as liquor sellers in case they dispense liquors in prescriptions. The city derives a large revenue from the licenses, which would be materially increased if all druggists were obliged to pay the fees, and it is naturally desirous that they shall not escape.

If there were any cases where the drug stores were really tippling places, under cover of dispensing medicines, there would be no sympathy expressed; but on the contrary, all reputable druggists would be glad to have such places suppressed, or their real char-

acter made known. It is not likely, however, considering the immense number of licensed saloons in New York, that there is any chance for such underhand business, and it is difficult to see the justice of requiring liquor licenses to be taken out merely for the right to dispense liquors in prescriptions.

CONVULSIONS OCCURRING IN A HAND-FED CHILD DUE TO OVER-FEEDING.

By Henry C. Archibald, M. D., Philadelphia.

THE following from my note-book may be of interest to some of the readers of the Gazette: .

On the 12th inst. I was asked to see a two months old child of Mrs. W., residing in the southern section of the city, who was seized with convulsions, and that after all the usual remedies in domestic use had been tried without avail, namely hot baths, mustard to feet and abdomen, etc. When I arrived at the house I found the child in spasms.

For a hand-fed child it seemed well nourished. The temperature was normal, and the pupils of the eyes failed to denote any brain lesion. The mother, an intelligent woman, belongs to that class which I have frequently seen in my practice who are unable to nurse their children owing to failure of mammary secretions, and in consequence have to resort to cow's milk or farinaceous food for the child's nourishment. I was informed that the child had been always more or less fretful, and to appease it the bottle was forever kept filled. I pointed out the harm such a course would of necessity entail upon the child, and directed the mother to give the bottle not oftener than once in every two or three hours. To relieve the convulsions, which I was certain were due to irritation from over-feeding, I gave an emetic of syrup of ipecac, which promptly caused emesis and directed the following to be given:

℞. Hyd. chlor. mit., gr. i.
Iron bi-carb., gr. iii.
Sach. alb., gr. x.
M. ft. chart. No., xii.
S. Use every hour.

and also applied to the abdomen spice plasters soaked in diluted alcohol. This treatment, with care in feeding, I had hoped would relieve the stomach and bowels and cause a cessation of the convulsions. A few hours after leaving I was again summoned in haste to see the child. The convulsions had increased in intensity, and the only change I made in my treatment was, in lieu of diluted, to use the *milk-peptones*, made by a New York house, and in order to ensure the milk being fully peptonized, I myself prepared the milk, with more than ordinary care, following literally the directions on the bottle. I had hoped that the casein would have undergone artificial digestion and thereby act as a non-irritant to the alimentary tract. My surprise was great after following up for forty-eight hours this peptonized milk food to find the *casein* of the milk still pass from the bowels in the form of a *curd*, and as firm as that which passed the bowels without the use of the peptones. This was so contrary to what I had hoped and looked for, that as a last resort I was compelled to discontinue the use of all food containing milk in any form and resort to beef-tea, which, with the small doses of calomel, was in every way satisfactory. The convulsions ceased and the child went on convalescing, and is now restored to perfect health. After keeping the child on beef-tea for three days, I again ventured to feed it with milk *peptonized* with the result of throwing it again into convulsions. The mother, seeing the effect of the milk diet, promptly laid it aside and again resorted to beef-tea, until now the child is able to take proper nourishment in the shape of good cow's milk diluted (minus) *peptones*. This article is written in the hope that those of the profession who rely on the statements spread broadcast relating to artificial digestion in the diseases of children, will accept the same with all due allowance.

1232 S. 10th Str.

ABOUT PNEUMONIA.

By A. Patten, M. D.

THE above is the heading of an article in the *New York World*, in which an interview is given with Dr. Alexander B. Mott, in regard to the nature and treatment of acute pneumonia. It seems to me that when a physician presents his views on so important a

subject as pneumonia, to be printed in a newspaper, he ought at least to make himself so far understood, presenting such facts and arguments, as to benefit both physicians and the public.

But Dr. Mott's views "about pneumonia" are far too obscure and illy-defined to enlighten either physician or patient. He first affirms that the disease is simply an "old-fashioned" inflammation of the lungs. In this he differs from such high authorities as Flint, Junguson, Draper, Schuyler, and others. On treatment he certainly says a very foolish thing. He says, "a good old-fashioned doctor should be sent for. No new-fangled notions should be tried. Treat the patient in the old way." Now the question for solution is, which old way does he refer to? He does say, "the old-fashioned treatment is active treatment." The treatment of heroic doses of tartar emetic was very active, and so old-fashioned that no medical author of this day advises its use in pneumonia. Cullen, Bush, Thomas, Lawrence, and McIntosh advised active bleedings, which was a very fashionable plan of treatment until Watson, in his admirable work on practical medicine, expressed the opinion that it ought to be dispensed with in most cases. Since then venesection has gone out of fashion, and so far as I know is not employed by physicians either in this contry or Europe to any great extent.

Thirty years ago Drs. Todd and Bennett introduced the alcohol plan of treatment which was certainly a very active treatment, and not a safe one by any means. This plan is no longer "fashionable" in this country. At one time a fashionable treatment was calomel, tartar emetic, aconite, veratrum viride, opium, and blistering in the second stage of the disease. Which one of these "old-fashioned" methods does Dr. Mott mean?

In addition to his ideas being obscure, they are mischievous in that they are calculated to discourage investigation and progress in practical medicine, which, as is well known, is not a fully developed science. Many years ago Cabonin wrote a book on the "Certainty of Medicine," and to illustrate his views that there was absolute certainty in medicine, he presented our exact knowledge of the pathology of pneumonia and perfect methods of diagnosticating the disease. This was true then, and it is true now as to pathology and diagnosis, but Cabonin was very careful not to present the treatment of pneumonia as another evidence of the certainty of medicine. Nor can we do so now, for there is no disease about which there is so much difference of opinion among physicians in regard to methods of treatment as the one under consideration. The homœopathists hold on to the old-fashioned plan of giving mercury, tartar-emetic and aconite. The eclectics avoid mercury, tartar-emetic, bleeding, etc., but blister, purge, give aconite, veratrum viride, opium, quinine, lobelia, asclepias, and other active agents. Dr. Austin Flint, in the latest edition of his "Practice of Medicine," advises the cold wet sheet, and quinine, as the main remedies in acute pneumonia. It may be affirmed that at present there is no "old-fashioned" or new-fashioned plan of treating this very fatal disease that is in general use, either in the North or South. Physicians of the highest standing in the regular old-fashioned medical schools differ as to the best method of treating pneumonia.

In view of the high rate of mortality attending the disease, and the great variety of methods of treatment in use, should not all physicians, both old and young, unite upon a systematic and rigidly scientific course of investigation and clinical observation as to the effects of remedial measures now in vogue, with the hope of establishing a plan of treatment that will not only be based upon a correct pathology, but will prove successful in practical results? In the article referred to, it is admitted that pneumonia is not only very prevalent in these parts this winter, but is attended with a high rate of mortality. Dr. Mott says that under the "old-fashioned" treatment a majority of the cases ought to recover. The truth is, that under the expectant plan of treatment not more than twenty per cent. will die, and with the rational and scientific treatment practiced by some new-fashioned doctors, the death rate will be reduced to less than five per cent. Dr. J. P. Thomas, of Kentucky, says that with the ammonia plan of treatment, in 220 cases, there were only three deaths. I began the ammonia method of treating this disease in the winter of 1862, and had an article on the subject in the October number of the *American Journal of the Medical Sciences*, Philadelphia, 1870, in which I claimed that the mortality was only two per cent. Since that time I have steadily followed the line of treatment suggested in that article, with equally satisfactory results. Still I am not by any means certain that a better plan of treatment may not be devised, and sincerely hope it may be

at a very early period. I must claim, however, that the ammonia treatment is based upon correct pathological considerations. Dr. Flint, in his "Practice of Medicine," 1866 edition, says that this medicine should be given in pneumonia to prevent heart-clot, which is a fruitful source of mortality in the advanced stage of the disease. He says: "I seldom treat a case of pneumonia that I do not give carbonate of ammonia. Dr. Richardson, the great physiologist, suggested the same remedy with the same object. Both of these distinguished medical writers admitted that there was a high degree of hyperinosis in pneumonia, which ought to be combatted by some effective defibrinizer. And in carbonate of ammonia they, as well as the highest authorities in therapeutics, recognized the superiority of ammonia over all other agents as a means of reducing the excess of fibrin in the blood during the progress of the disease. But while the views of these great men were in the highest degree valuable, they unfortunately failed to assign ammonia its true place in the therapeutics of this fatal disease. I say unfortunately, for if Flint, in his Practice, had taught that ammonia, by its power as a defibrinizer would, if given in the first, as well as second and third stages of the disease, prevent the extension of inflammatory action to the contiguous tissues, pleuritis, bronchitis, pericarditis, double pneumonitis, and profound hepatization complications, which it is well known have so much to do with the fatality attending this disease, would all be avoided. If given early, it not only lessens the amount of the rusty bronchial secretion, but breaks down its tenacious adhesive qualities, making expectoration easy and less painful.

But in addition to ammonia being a powerful defibrinizer, it is also the most effective decarbonizer known to the profession. And as the disabled lung fails to perform its functions as a decarbonizer to the blood, some agent is required that will, by its chemical action, neutralize this poison, and aid its elimination through the kidneys and bronchial mucous membrane. Most of the awful complications arise from this cause, and the neurotic action of this poison on the great nerve centres greatly weakens and embarrasses the respiratory function. Those dangerous complications are prevented by ammonia. So striking is its power as a respiratory stimulant, that a French writer attributes to its action in this direction most of its good effects in pneumonia. This writer reports a number of very severe cases of pneumonia cured by a "respiratory stimulant," consisting of carbonate of ammonia and tincture of nux vomica. His treatment is good, and the results were very satisfactory, but his error is in not recognizing the true value of ammonia as a defibrinizer.

Nux vomica no doubt aids the action of ammonia in some cases of poisoning to the nerve centres by the carbonic acid in the blood. Tincture of digitalis is indicated where there is a failure of heart power, and should be given in fifteen-drop doses to give tone and strength to the heart where there is a want of force. Hot fomentations, poultices, turpentine stupes, and even blisters in the first stage are valuable adjuvants.

If there is profuse congestion in the first stage, giving rise to severe dyspnœa, extreme sinking and prostration of the vital powers, which sometimes leads to a fatal termination before inflammation is fully developed, there is no remedy equal to chloroform in half or even one drachm doses.

Opium may be required to relieve severe pain, especially if there is a pleuritic complication, but if the ammonia, either carbonate or the muriate, has been given early, there will not be much severe pain, and opium will not be required.

If there is a malarial complication quinine will be indicated, and should be given in moderate quantities.

My experience with the plan of treatment suggested in this article has not been confined to the South, as I employed it constantly during a twenty years' practice in Vincennes, Indiana. The carbonate of ammonia may be given in five-grain doses every two, three or four hours in two ounces of water. The muriate may be given in ten- or fifteen-grain doses, but to accomplish the same amount of good as the carbonate, the dose has to be so large that it is apt to produce nausea, and even vomiting, which the carbonate seldom if ever does.

The plan of treatment I have suggested for pneumonia may subject me to the censure of being a new-fashioned doctor, and the methods "new-fangled," as Dr. Mott says in his newspaper article. It is true that I am a believer in progress and advance in practical medicine and therapeutic methods. How imperfect was our knowledge of the physical

signs of all lung and heart diseases until Lænnec, Louis and others taught us the then new methods of diagnosis—ausculation and percussions. How imperfect were our methods of treating all malarial fevers until cinchona and its various preparations were discovered. How imperfect were our methods of preventing pain in surgical operations until the anæsthetic properties of ether and chloroform were discovered. Ten years ago most medical writers taught that digitalis was a powerful sedative instead of a heart tonic as is now believed by all well-informed physicians.

In grindelia robusta, and grindelia squarrosa we have found effective remedies in asthma and hypertrophy of the spleen. We have also discovered that by the long-continued and daily use of digitalis some organic diseases of the heart may be absolutely controlled and the patient rendered comfortable during a long life.

But, notwithstanding the wonderful progress that has been made in practical medicine in the last twenty-five years, it is far from having attained perfection, and it is the duty, as well as pleasure, of all truly scientific physicians to be constantly on the look-out for better, safer, and more rational methods of treating all forms of disease.

It is readily admitted that some of the old-fashioned methods are good, and should be adhered to faithfully by old and young doctors, by old-fashioned as well as new-fashioned doctors. But it cannot be denied that many new remedies and new methods are far superior to the old ones, and ought to be adopted by all practitioners of medicine. I hope my suggestions as to the treatment of pneumonia may induce a large number of the readers of this valuable journal to give the ammonia a fair trial.

While I am a believer in pneumonia being a true inflammation of the lung tissue, it may yet be demonstrated that it is not an inflammation, but only a pneumonic fever, as claimed by Flint and others. Still, as there is admitted to be a high degree of hyperinosis in the disease, the ammonia treatment is indicated, and clinical results demonstrate beyond any question its great value as a remedy. Not a single bad result has followed the use of this agent even in heroic doses, so far as my observation has gone, and its good effects are admitted by the most careful observers. So much cannot be said in favor of general bleeding, for I have several times seen patients sink immediately after even a moderate bleeding in pneumonia terminating fatally in a short time The injurious effects of venesection in this disease were so striking and so disastrous, that even the boldest practitioners became afraid to employ it. Still, if we could know precisely the right time, and the right abnormal condition for its use, bleeding would be a most valuable agent in pneumonia, and all inflammatory diseases. But the well-known tendency of this, as well as tartar emetic, calomel, aconite, veratrum viride, and all agents of that class, to produce debility renders them unsafe measures in pneumonia. But the most dangerous and the least scientific method yet practiced in pneumonia, is the alcohol plan. It is not a defibrinizer in any sense; on the contrary, it tends to produce heart-clot, embolism and an increase of fibrin in the blood, leading to pleuritic, cardiac, bronchial and other dangerous complications. It is not a decarbonizer, as it is well-known that its tendency is to generate carbonaceous matters in the blood, and by rendering the kidneys and bronchial mucous membrane torpid, prevent its elimination through these outlets. And by its action as a cerebral excitant, concentrates the poisoned blood in the vessels of the brain, leading to dangerous cerebral complications. The only scientific indication for the use of alcohol in this disease, is in the latter stage, where there is extreme prostration and extensive suppuration. In this condition it does good by arresting metamorphosis, and sustaining the nutritive forces, until the dangerous crisis has passed.

Ergot may be employed with advantage to produce its specific action in contracting the blood-vessels of the inflamed parts. But it is too slow and feeble to be relied on as a main remedy in so formidable a disease as pneumonia. A saline cathartic in the early stage is indicated in most cases, but should not be repeated. After that, if the bowels need attention, use enemata. With this line of treatment, faithfully employed from the first to the last stages, the mortality of pneumonia will be very low, whether in the cold or warm latitudes.

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Leading Articles.

THE PHYSIOLOGICAL ACTION OF COCAINE.

It is a curious fact that as early as 1868 Moreno y Maiz brushed against the great discovery of Koller, and indeed, went so far as to say (p. 77 of his Paris thesis) that he had "employed it [acetate of cocaine] as a local anæsthetic;" and that again in 1880 Von Anrep should have called attention to the probable value of the alkaloid as a local anæsthetic, and yet neither of them really recognized the importance of the facts they had seen, so that it was reserved for a Viennese student to gain at a stroke world-wide renown. Journals have so abounded with the outcome of this late discovery that we shall to-day say naught else about it, but shall discuss that which has been so strangely neglected, the general action of the drug upon the animal organisms.

Although coca is used to an enormous extent in South America, our knowledge as to its action upon the human body is far from complete; indeed, but very few scientific observers have given detailed reports of the symptoms it causes when taken by men.

M. Rossier took an infusion representing about nine hundred grains of the leaves (*Echo Médicale*, 1861, No. 8). He describes it as producing a very complete feeling of bodily and mental calm, accompanied, in about half an hour, with dilatation of the pupils, and some burning in the hand; and states that the next day on examining what he had written under the influence of the coca, he found that although the words and dictation were very good, the handwriting was almost illegible.

M. Demarle has noticed after feeble doses of coca a peculiar desire for movement, which was often accompanied by a peculiar loquacity associated with some salivation; but in other cases there was induced an indolent mutism with a dry oral and buccal mucous membrane

The most complete account which we have of the immediate general action of coca upon the human system is that of Dr. Mantegazza, and there is good reason for believing that his report is tinctured by enthusiasm. There seems, however, to be very little doubt but that moderate doses of the drug do increase to a very extraordinary degree both physical and mental power.

Mantegazza states that when he took two hundred grains of the leaves he was in a short time plunged into a condition of peculiar beatitude in which he seemed to be isolated from the rest of the world, and to live in an atmosphere of active calm. In a little while there came also a sense of plenitude of power, which was accompanied by a real increase of physical ability; so that gymnastics, which in his ordinary condition were impossible to him became easy. The condition was finally succeeded by a natural, profound sleep, lasting sometimes the whole of twenty-four hours. After very large doses of coca in Dr. Mantegazza's case a peculiar series of symptoms occurred, to which the name of "cocaleine intoxication" was given. Thus on one occasion he took thirty-five grammes, and an hour later nine grammes, etc., until he had taken in the course of two hours sixty grammes in all. The heart, which after the earliest dose had been slow in its actions, directly after the second suddenly became rapid and very violent in its beats, but at the end of the two hours the palpitations had ceased, although the pulse was still one hundred and twenty-eight per minute. There was now a condition of intoxication similar to that produced by haschisch. M. Mantegazza was possessed by a feeling of intense beatitude, an inner joyousness, whilst a succession of visions and phantasmagoria, most brilliant in color and form, trooped rapidly before his eyes. He seemed to him-

self to look out upon a world of shifting and incessant activity as into a kaleidoscope. He rapidly passed into a delirious condition, in which he appeared to himself to be unconscious, although when addressed, he would answer rationally. To his own consciousness he was as it were, buried in a reverie, or perhaps, a more accurate description would be to say that he felt as though by a sudden rush of intellectual and emotional life he was carried out of himself, and knew not whether he was in or out of the body. An hour or two later he was sufficiently calm to say to his friends "that God was unjust, in that he had made man to live without eating coca; I prefer a life of ten years of coca, to one of a thousand years without it." As this state was passing off, he was seized with an irresistible desire to re-produce its delirium by taking more coca; finally, however, he fell into a condition of sleep which lasted only three hours. After this he was able to resume at once his ordinary occupations, and offered no physical evidences of his coca debauch.

The moderate daily use of coca, according to our best information, is not in any sense injurious, and increases the working powers, but, according to Professor Pœppig, the habit of the excessive use is readily formed, and produces very serious results. The first symptoms are usually those of disorder of the digestive organs. Little by little the power of digestion is lost, an incurable insomnia is developed, emaciation becomes extreme, ascites appears, and the patient finally dies in a condition of general marasmus. Other authors especially dwell upon the enfeeblement of the intellectual faculties as very marked in those who use the stimulant to excess. Dr. Tschudy states that the inveterate coca-chewer can be recognized by his uncertain step; his general apathy; his sunken eyes, surrounded by a deep purple aureole; his trembling lips; green encrusted teeth, and his excessively fœtid breath, with the peculiar blackness about the corner of the mouth.

Pronounced aphrodisiac properties have been attributed to coca, but they seem to rest rather upon tradition than demonstrated experience. According to M. Unanue, the ancient inhabitants of Peru represented Venus by a female figure with a coca leaf in her hand; and the coca still plays an important part in the nuptials of the Indians.

It has been affirmed by Tschudy and Unanue that coca is able to take the place of food, but this is clearly not the case. Dr. Wendell himself states that although an Indian chewing the coca could go on foot many hours without fatigue and without food, yet at the end he would eat more at one repast than he himself would take in two days. He accords with Bibra (*Die Narkot. Genussmittel*, 1855) in stating that the coca has the power of putting aside for some time the sense of hunger. Whilst, however, it may mask the appetite, it certainly does not nourish the body. Thomas Moreno y Maiz (*Thèse*, Paris, 1868) made several crucial experiments by keeping animals in pairs without food, and giving to one coca freely. These experiments have been repeated by B. von Anrep (*Pflüger's Archiv*, 21, 1880), and in every case the animal which received the coca died at least as early as its mate.

In order to cause death enormous doses of the alkaloid cocaine are required. According to von Ploss (quoted by Husemann, *Die Pflanzenstoffe*, 2nd ed.), an apothecary for suicidal purposes took twenty-two grains of cocaine in a glass of beer. He shortly afterwards went to sleep, but awoke in some hours with great abdominal pains, dryness in mouth, excessive weakness and vertigo. He suffered from suppression of urine for twenty-four hours, but had no further disturbance of consciousness or of the heart's action.

Besides the studies of Dr. Ott (*Toxicological Studies*, Philadelphia, 1874), there are three physiological articles upon coca. Two of these memoirs I have never seen, and only know them through abstracts, especially those of the article of B. von Anrep (*Archiv für die Gesammte Physiologie*, Bd. 21, 1880, p. 38). With this material it is possible to examine somewhat in detail the physiological action of the drug.

It may in the first place be considered settled, that very small doses (one to three one-hundredths of a grain of cocaine) produce in the frog no other symptoms than some evidences of excitement. After doses of from one-tenth to one-fiftieth of a grain the frog becomes quiet with an apparent increase, however, in the reflex activity, sometimes amounting to tetanus, followed by increasing palsy, and failure of the respiration; very large doses produce symptoms of paralysis.

In the domestic animals the symptoms vary. In the rabbit there is first a peculiar state of quiet, followed in a few moments by a condition of great excitement, in which the animal springs and jumps about; a few minutes later the rabbit again becomes quiet, and now, although trembling much, is so weak that he moves with difficulty. The tremblings in-

crease until they merge into convulsive movements of the legs, whilst at the same time there is partial paraplegia. Pendulum movements of the head are very marked, and finally, epileptiform convulsions appear, whilst at the same time a peculiar tetanic rigidity seems to indicate spinal excitement. The lethal dose for a rabbit is put at a grain and a half per kilogramme. Dogs and cats are said to be more susceptible to the action of cocaine than is the rabbit, and to suffer similar symptoms, but especially with the dog the evidences of mental excitement are more pronounced.

Nervous System.—The most susceptible portion of the body to the action of the cocaine is the cerebrum. The peculiar sense of calm, which follows moderate doses of the drug, is evidently the result of the action on the brain, which eventuates, after a sufficient dose, in the peculiar ecstacy so graphically described by Mantegazza. According to the description of von Anrep, this delirium is almost equally pronounced in the dog; thus a very quiet animal, almost immediately after the injection of the cocaine will begin to dance and leap, never standing still for a moment, and continually circulating around the experimenter. The movements are not at all those of convulsions, but are voluntary and accompanied by every expression of joy and exhilaration; this may continue for hours and the animal become gradually quiet, and pass finally, into his normal condition. If instead of a moderate dose a toxic one has been given, there is first a period in which the animal is very restless, but seems full of terror and anxiety, the least sound frightens him causing him to tremble and to drop his tail between his legs. He does not appear at this time to know his master. Rhythmical movements of almost all portions of the body accompany this state. Fifteen or twenty minutes later the mental condition alters, and the dog becomes apparently full of joyous excitement; he barks loudly, runs from one person to another, licking them, and giving all the characteristic signs of joy and pleasure. After a few moments this condition gives way to one of increasing feebleness; the dog gradually becomes unable to move, rhythmical movements, cramps and convulsive symptoms appear; the pendulum-like swaying of the head becomes very violent, and at last, narcosis develops. It is evident that many of these symptoms are psychical.

B. von Anrep believes that the drug has a very distinct and peculiar influence upon the *semi-circular canals*, thereby causing the peculiar pendulum-like motions of the head, the lack of coördination and the rolling convulsions especially seen in doves.

According to the researches of von Anrep, the convulsive movements are of cerebral origin, and are arrested by section of the spinal cord. Dannini appears, however, to have found that the section of the cord did not prevent convulsions in the hind feet. To settle this discrepancy further experiments are of course necessary. It is to be remarked that even von Anrep affirms that after, as before, section of the spinal cord, reflex activity is increased by cocaine, and certainly other observers have noticed an increased reflex activity as constant after small doses. This evidence indicates that the drug stimulates the motor tract of the spinal cord; yet it is possible that the sensory stimulation may be the sole cause of the excited reflex action.

It is established, by the concord of almost all observers, that the sensitive nerves, after sufficient doses of cocaine, are finally paralyzed, and the statements and experiments of Nikolsky, of B. von Anrep, and also of Ott, appear to prove that the stage of sensory paralysis is preceded by one of increased functional activity of the afferent or sensory nerves.

The motor nerves, according to Dannini, in the frog remain irritable until after death; but according to Nikolsky their functional activity is first increased and afterwards destroyed. Ott also asserts that cocaine depresses the motor nerves, and Moreno y Maiz found that when he tied the iliac artery of a frog on one side and administered cocaine anteriorly, there came a time when irritation of the poisoned limb caused no movement, whilst irritation of the protected extremity provoked very distinct reflexes; at the same time there was diminished motility in the non-protected limb as compared with the protected one. These facts, of course, indicate that the drug finally depresses both motor and sensory fibres, but that its action upon the motor is subordinate to that upon the sensory nerves. Ott also noticed that there is a time in the poisoning when irritation of the central end of a cut sciatic nerve produces no response, whilst irritation of its peripheral end causes muscular action, and thereby confirms the view that the drug affects the sensory earlier and more powerfully than the motor nerves.

An observation made at a certain stage of the poisoning by Dr. Ott, viz: that irritation of the posterior columns of the spinal cord

produces no effect, whilst a prick of the anterior columns is followed by the usual result, shows that there is the same difference in action upon the sensory and motor tracts of the cord as upon the corresponding nerve trunks. Indeed, B. von Anrep (loc. cit. p. 56) found that after tying one of the arteries and administering cocaine the protected leg soon lost the power of reflex action, evidence that the sensory side of the cord is only somewhat less susceptible to the influence of the alkaloid than are the sensory nerves themselves.

Circulation.—According to von Anrep, as well as the earlier observations of Nikolsky, the heart of the cocainized frog is gradually weakened and arrested in diastole; but observers agree that except after enormous doses of cocaine the heart remains beating long after cessation of respiration.

In mammals, according to B. von Anrep, the pulse is usually increased by full doses of the alkaloid. B. von Anrep states, however, that this increased rapidity is not marked in rabbits, and in Ott's experiments upon dogs, before death the pulse usually became slower. The increase of pulse-rate certainly was not constant. In regard to the action of cocaine upon the vagi nerves there is an absolute contradiction of evidence. Anrep affirms that they are paralyzed by large doses, and that this condition is never preceded by excitement, whilst both Ott and Nikolsky state that cocaine does not affect the vagi at all. Whatever may be the action of cocaine upon the heart, it seems established that the rise of arterial pressure which it causes is largely the result of contraction of the arterioles produced by stimulation of the vaso-motor centre in the medulla, since Dannini has found that after section of the cord, cocaine is powerless to increase the arterial pressure, and Ott, that when the cord is cut in the cocainized dog the pressure falls to the level it usually occupies after such section in the unpoisoned animal.

Muscles.—There is a distinct contradiction as to the effect of cocaine upon the striated muscles. Both Nikolsky and B. von Anrep state that the latter are not affected by the alkaloid, whilst Ott affirms that it acts upon them like veratrine, and is confirmed in this by Buchleim and Eisenmenger (*Pflanzenstoffe*, 3d, p. 885). The tracings given by Ott would appear to prove that the muscular contraction is prolonged by cocaine, and can hardly be accounted for by a condition which M. J. Rossbach and B. von Anrep (*Pflüger's Archiv*, bd. xxi, 243) allege to be produced, viz., a peculiar extensibility of the muscle similar to that produced by curare, and like it caused by a lessening of muscle-tonus by paralysis of the peripheral nerve endings.

Observers agree in stating that there is during a certain stage of cocaine intoxication a remarkable rise in the rectal temperature. Bennett, Ott and von Anrep are in accord in stating that this rise of temperature is preceded by a fall; in toxic cases the temperature appears again to become sub-normal before death. Von Anrep states that the skin temperature is always elevated from the beginning. The rise in the rectal temperature reaches the maximum (1° C.) during the convulsive stage, but is not produced by the convulsions; as Danniani has found that it occurs in curarized animals.

Elimination.—According to Moreno y Maiz cocaine is eliminated by the kidneys. Tarchanoff has noticed sugar in the urine after poisoning, but Anrep affirms that the sugar and the albumen, which is also frequently present, are caused by the asphyxia.

Both Drs. Ott and Atherton P. Mason (*Boston Medical and Surgical Journal*, Sept., 1882) find that coca lessens the secretion of urine and very markedly the elimination of urea. Dr. Mason employed very large doses of coca during prolonged exercise. It is, therefore, very probable that this drug diminishes tissue-waste; although Dr. Mason states that Gazeau has obtained contrary results. In Dr. Ott's specimens the urine became filled with crystals of oxylate of calcium.

Respiration.—Fatal doses of cocaine kill by paralysis or by arrest of respiration. After small doses, according to Von Anrep, the respirations become somewhat more rapid and deep, or in some cases simply more rapid. After large doses, the respirations become at first rapid and more shallow; then irregular, with interruptions, after each of which the respiratory movements begin deep and slow, but become more rapid and shallow until the next standstill.

According to Von Anrep, the intestinal peristalsis is markedly increased by moderate doses. After large doses, this increase is followed by great sluggishness, deepening into paralysis.

The pupil is dilated in both warm- and cold-blooded animals. Nikolsky concludes that this dilatation is not produced by irritation of the sympathetic nerve, because, after section of this nerve, coca still dilates the pupil, and also, when the pupil has already been dilated,

section of the sympathetic does not produce contraction. These facts, however, do not warrant Nikolsky's conclusions, for the action of cocaine is evidently upon the peripheral nerve endings, since the local application produces a dilatation of the pupil lasting from one hour to two days, according to the dose used.

Tarchanoff states that coca increases the mucous secretions, but Anrep affirms that it decreases them.

COCAINE IN GENERAL PRACTICE.

That there is such a thing as fashion even in therapeutics can scarcely be questioned by those familiar with medical literature. New drugs and chemicals are being constantly discovered and after a more or less thorough experimental and clinical trial are presented to the profession in rather eulogistic terms. But as the sphere of application of the new remedy enlarges, the appearance of undesirable, often positively objectionable features, previously unnoted, frequently leads to a reaction, the drug gradually loses its reputation and ultimately disappears from the field of practice. This fate, we can confidently assert, is not likely to be shared by cocaine, which, though possibly not sustaining its rapidly gained reputation to the alleged extent, seems nevertheless destined to secure a permanent place in therapeutics.

The readers of the THERAPEUTIC GAZETTE having been sufficiently well informed of the excellent services cocaine is capable of rendering in ophthalmological surgery, we desire now to consider its therapeutic worth in general practice, simply calling attention to the wide scope which experience has shown it to possess.

In cases of minor surgery involving the mucous membranes which are sufficiently painful to call for an analgesic, but do not warrant the induction of constitutional anæsthesia, cocaine fills up a long-felt gap. Its value is enhanced in case of a direct contra-indication of both ether and chloroform, as in heart disease or in patients of very tender age. Its action on the skin not denuded of the epidermis being of course but very slight, it has to be used hypodermically to obtain any decided effect, though when so employed a sufficient number of trials both in private and in hospital practice vouch for the promptness and constancy of the remedy. In a case of phlegmonous inflammation of the hand requiring several incisions Dr. Burke found the subcutaneous injection of ten drops of a twenty-per-cent. solution of the hydrochlorate of cocaine to exempt the operation from any pain; Dr. Wilson also rendered the operation of extirpation of an adenoma perfectly painless by a previous hypodermic injection of cocaine (*N. Y. Med. Journal*, Nov. 29, 1884, *N. Y. Med. Record*, Nov. 22, 1884). So too Dr. Croston reports having removed an epithelioma of the cheek without causing more than slight pain after using three injections, consisting each of four drops of a four-per-cent. solution of the hydrochlorate of cocaine (*Boston Med. and Surg. Journal*, Dec. 11, 1884). To determine the extent of surface rendered insensible by the subcutaneous use of cocaine, Drs. Hall and Halstead made several interesting experimental trials with the remedy, and found the zone of anæsthesia produced by a hypodermic injection to extend two to three inches from the point of injection. They also noted vertigo, nausea, cold sweats, and dilatation of the pupils accompanying its exhibition, and justly concluded that cocaine exerted a toxic influence upon the central nervous system (*Deutsche Medizinal Zeitung*, No. 7, 1885.)

In cases of dental surgery of the most varied description the drug has rapidly gained a high reputation. In extensive burns and scalds cocaine has no rival in almost instantaneously subduing the usually very intense pains. Dr. Adelbert Weiss, of Vienna, being called to attend a gentleman severely scalded in the face by an explosion, ordered, after temporary application of oiled rags and ice, the well-known mixture of aqua calcis and oleum lini, and at the same time a two-per-cent. solution of hydrochlorate of cocaine. The pains were so agonizing that convulsions were feared, since the pains could not be mitigated by the constantly renewed ice application. The very moment that the scalded parts, partly progressed to vesication, were touched by the brush dipped into the cocaine solution, the pains disappeared as if blown away, and did not return. (*Wiener Med. Wochenschrift*, Jan. 3, 1885.)

Equally instantaneous is the relief which cocaine gives in hæmorrhoids in anal fissure, in fact in all affections of the rectum and anus. Dr. Krause praises the beneficent services of the drug in the painful dysphagia of tubercular patients. (*Gazette Médicale de Paris*, Jan 31, 1885.)

In persistent vomiting of pregnancy the drug was successfully exhibited by Dr. Holz in ten-drop doses of a three-per-cent. solu-

tion, repeated three times at an interval of twenty-four hours, producing the entire cessation of this grave symptom.

In otology, cocaine seems to render no lesser service than in ophthalmology. The experiences of Jellinek, Schröter, Schnitzler, and Störk regarding the indications for the use of cocaine in otological practice, are fully corroborated by Zaufal. (*Centralbl. f. d. ges. Therapie*, Feb., 1885.)

The principal indications for its use are otitis externa, to produce anæsthesia of the external auditory canal; operations on the tympanic membrane, paracentesis, galvanocautery, plastic operations; in myringitis, otitis-media, and chronic catarrh. In tinnitus aurium Zaufal obtained encouraging results with an instillation of four drops of a two-per-cent. solution of the hydrochlorate of cocaine. This observer also calls attention to the fact that cocaine is capable of reducing and preventing hyperæmia at the points in which it comes in contact with the tympanic membrane, and hence he thinks the drug is possessed of a vaso-inhibitory power.

In affections of the urino-genital organs, cocaine has also been advantageously employed. Its uses in obstetrical practice have not yet been sufficiently studied to obtain a just conception of its value, though it is certain that it is very serviceable in the pain produced by the tension of the perineum and the dilatation of the os. Dr. Cabot, of Boston, has used cocaine in an operation for phimosis, and found it to give satisfactory results. The researches of Dr. Blumenfeld showed that a complete urethral anæsthesia, extending to the posterior limit of the prostatic portion, might be induced by an injection of a small quantity of a two-per-cent. solution of cocaine. Solutions intended for the urethra ought to be prepared without alcohol (*Deutsche Med. Wochenschr*, No. 50, 1884). The indications for the use of cocaine for the urethra are, endoscopic explorations, operations, retention of urine, catheterization in cases of irritable urethra, prostatitis and lithotripsis.

That in vaginismus the drug is highly useful, is acknowledged by all observers. Dr. Cazin, of Brooklyn, reports a case of vaginismus of six years' standing, which was easily cured with the aid of cocaine. So also the use of the speculum can be rendered painless by a previous application of cocaine.

Dr. Bettelheim recommends its use in tenesmus of the sphincter ani and recti, the effect being instantaneous, though of little permanence.

There is apparently no limit to the sphere of usefulness of cocaine. It is also positively serviceable in all painful affections and operations on the larynx, and in various forms of neuralgia. Dr. Murel found it to bring prompt relief, in certain forms of neuralgia, when administered either by an hypodermic injection, or, preferably, by frictions on the seat of the pain.

It is to be hoped that the present enormous price of the drug, created by the large and sudden demand, will soon drop sufficiently to allow of a general introduction into practice of this very efficient remedy.

NOTES ON THE TREATMENT OF TYPHOID FEVER.

FIRST PAPER.

THE most important part of the treatment of typhoid fever is the early putting to bed. Of course this involves the early recognition of the disease, or, rather, the habitual practice of suspecting the coming-on of the fever upon the least intimation of its possible approach, and the prompt acting upon this suspicion. In the great majority of cases, death occurs in typhoid fever from exhaustion; and if sufficient strength be left in the patient just to escape from dying at a certain time, recovery is ensured. The gain of life-power saved by going to bed a day earlier may be all that is needed in the crisis to save the life. In a large proportion of fatal cases of typhoid fever, if absolute rest had been enjoined one or two weeks earlier than was done, the ultimate result would probably have been different.

In the early recognition of the disease, much can be gained by a study of the face. Some time ago the writer of this article was at a table with a number of lawyers who were engaged in an important trial, in a distant state. One of these lawyers complained of feeling miserable and having had a feverish night. Without examining the patient at all, it was suggested that this man be sent home, as he was threatened with typhoid fever. The suggestion was acted upon, and the prognosis proved correct. On the other hand, sometimes the recognition of the disease is exceedingly difficult. Years ago a man walked into the Pennsylvania Hospital, sat in the waiting-room several hours, walked to his ward, and took his seat at the bedside. It so happened

that the visiting physician, as well as the resident (the present writer), made an evening round that day. The patient was examined, but no diagnosis arrived at. The doctor in charge said: "The case is so obscure I cannot make it out; put the man to bed, and in the morning we will examine him further." In the morning the man was dead; and the autopsy proved that not only was he in an advanced stage of typhoid fever, but that he had suffered from perforation of the intestines for at least three days. The perforating ulcer was very clearly made out, and the intestines were bound almost into a solid mass by great quantities of freshly exuded lymph.

The impossibility of recognizing typhoid fever with certainty in the beginning, and the importance of putting the patient to bed early in the disease, has led the writer to making it an invariable rule, whenever a person is found with progressive, unaccountable weakness, who has not had typhoid fever, and is at the typhoid fever age, to suspect the disease, and to put the patient to bed. If there be any elevation of temperature, or tendency to diarrhœa, of course the suspicion is strengthened; but neither of these is an essential. It is the progressive, unaccountable weakness and failure of vital power which is the important element in the case. When a student of medicine the writer was attacked with diarrhœa, fever and nose-bleeding, all having been preceded by prolonged malaise; typhoid fever was supposed inevitable, but the attack proved to be measles. When the typhoid fever did come, there was no nose-bleed, no diarrhœa, no marked elevation of temperature.

A very good way of testing the strength is to note the alteration in the pulse, when the patient is put suddenly from the horizontal to the erect position. If the pulse, under these circumstances varies twenty or thirty beats, bed should be prescribed. Of course it would be absurd to tell the patient that he had typhoid fever; it is usually enough to say that bed is required, but it may be necessary to explain the possibility of the approach of the serious disease, and the importance of taking precaution. The rule of early, absolute rest, and the avoidance of all specific medication is the best advice that can be given. Carbolic acid, iodine, mineral acids, and other of the drugs so generally used by the profession are simply abominations, to be utterly avoided in this disease. Of these, however, it is intended to speak more in detail in a subsequent editorial.

It is very important that when a patient is put to bed, absolute rest be enjoined from the very first outset. No person threatened with typhoid fever, much less one suffering from, it should be allowed to get out of bed under any consideration whatever. The use of the bed-pan and urinal must be strictly enforced from the beginning. No drugs, no combination of drugs, no measures of treatment, no good nursing, no skilful doctoring will atone for the least latitude or carelessness on this point. Rest absolute, both of mind and body—seclusion, quiet and perfect physical passivity—these are the key-notes to the successful treatment of typhoid fever. Their importance is very generally acknowledged, but in private their strict enforcement is but too often disregarded with fatal consequences.

THE POISONS OF ORGANIC DECOMPOSITIONS.

The subject of the poisonous principles elaborated by animal matter under certain conditions belongs to the most obscure chapters of toxicology, and although such poisons are chiefly developed in putrefactive decomposition occurring after death, the conditions necessary for the development of such principles may nevertheless still be found in a living animal organism, as seen in the poisons of hydrophobia, venomous reptiles, and in certain cases, even in the human saliva. The isolation of the toxic principles contained in decomposing organic matter, though the subject of numerous researches, has only comparatively recently been successful. The greater part of our information on this subject dates from the isolation by Selmi, as recently as 1872, and alkaloid-like bodes to which he gave the name of ptomaines; his results, however, attracted but little attention, until he published his second paper, in 1878, as the result of experiments carried on through six years, in which he described ptomaines whose actions simulated those of conine, morphine, atropine, and delphinine. It would appear that somewhat similar principles developed frequently in tainted articles of diet, and a number of such cases have been collected by Dr. Kobert (*Schmidt's Jahrbücher*, vol. 204, 1884), in which symptoms of such cases of poisoning are detailed at considerable length. Thus, reference is made to the case of a wealthy family in Solfeldt, Prussia, consisting of the father and mother, three

grown-up daughters and a son, who became seriously ill a day after eating fish, which had been apparently well preserved, which had been boiled five days previously in vinegar. The symptoms consisted of muscular paralysis of the pharyngeal constrictors, thus rendering swallowing impossible, and inability of recognizing near objects; a collection of symptoms which is regarded by Dr. Naunyn as perfectly characteristic of poisoning by ptomaines, but which is strikingly similar to the symptoms of atropine poisoning. The poisoning in this case was not due to the use of copper vessels in cooking, nor to the accidental substitution of hemlock for parsley, facts which have been found to explain somewhat similar cases.

So also Dr. Schreiber reports a number of cases of poisoning by the use of tainted fish, which occurred in a family of six persons, in all of whom violent symptoms, such as dryness of the mouth, difficulty in swallowing, and general malaise, appeared within fifteen hours. Ocular examination revealed paralysis of the superior, inferior, external, and internal recti muscles; paralysis of oculo-motor nerves with resulting ptosis, failure of the pupil to react to light, pronounced mydriasis, and double vision. Here again the symptoms closely resembled those of atropine poisoning, but the absence of an increased pulse rate was an important point in the formation of the diagnosis. Two of the cases died under symptoms of asphyxia, though no characteristic lesions could be distinguished at a post-mortem.

In the *Lancet*, also, of May 3, 1884, are reported cases of poisoning in five persons, caused by eating the liver of a calf which had been suffering with pleuro-pneumonia, and which had been killed four days before. The symptoms here were somewhat similar to those previously reported; in addition, violent pains in the stomach and diarrhœa, but no one of the cases proved fatal.

While all these above instances relate to a possible post-mortem development of the poison, certain kinds of fish are invariably poisonous when used as articles of diet. The most prominent example of this fact is found in the various varieties of the globe-fish (*tetrodon*), found in Japanese waters, which has been made the subject of careful study by Dr. K. Osawa (*Transactions of the Sei I Kwai* or *Society for the Advancement of Medical Science in Japan*, Feb. 1885). He has found that the poisonous character of the flesh of these fish is principally localized in the liver and eggs, and the virulence of the poison is most marked during the period of gestation, about April, while towards December its intensity is much lessened; and while the viscera are all more or less poisonous, the flesh is almost entirely free from poisonous matter. Here also direct experiments have proved that the poisons exist in the tissues before death and are not products of decomposition, because the fish is still poisonous, even if given immediately after death, while when allowed to stand in water for a time, the virulence is much diminished, owing to the exudation of the poison into the water. Moreover, the boiling of the eggs and the liver to prevent fermentation does not produce any change in their poisonous nature, so that the poison in question is not the product of decomposition, as is that of some other fish. The cause of death in this case, as in the cases of poisoning from tainted matter to which we have above alluded, lies in the respiratory centre; that is asphyxia is the cause. The first effects of the poisonous principle is dilatation of the capillary blood-vessels, followed by retardation of the circulation; next, the heart's action becomes irregular, the ventricles contract once to five contractions of the auricles, then the toxic effects appear in the digestive system under the forms of cramps of the abdominal muscles and vomiting. These symptoms are followed by spasms of the limbs, petechiæ, dilatation of the pupils, etc., and death. No satisfactory method of treatment has ever been found.

Like the above, the poison of snake bites may also possibly be classed among the group of ptomaine poisons; particularly since it has been pointed out that the snake venom may be absorbed by the alimentary tract, when symptoms are produced closely analogous to those which we have just described. The danger, therefore, of attempting to suck the venom from snake bites is evident.

RHIGOLENE.

THE great enthusiasm with which the use of cocaine has been accepted, has put observers on the look-out for other local anæsthetics; and we find that Dr. W. Chapman Jarvis, of New York, recommends rhigolene for this purpose, stating that its action is more decided than that of cocaine, but less prolonged. He has used it in the form of a

spray, applied to the skin and the mucous membranes, and says that the anæsthesia produced is such that the tissues may be divided freely without pain or hæmorrhage. It is of course, however, evident that these effects are simply due to the great cold produced by its evaporation; in other words, it freezes the tissues, and therefore can be no more regarded as a local anæsthetic, in the sense that cocaine is employed, than can a lump of ice. Nevertheless this note of Dr. Jarvis' will not have been without value, if it serves to attract attention again to this substance whose properties it appears to us have been neglected. This production of anæsthesia by freezing was originally introduced by Dr. Bigelow, the discoverer of rhigolene, and it has been almost the sole use to which this article has been put. Rhigolene is entirely insoluble in the blood at an ordinary temperature, and there can, therefore, be no question as to the absorption of rhigolene when applied in the form of spray to the tissues. It is one of the lightest fluids known, boiling at a little over 80° F., and with a specific gravity of 625, water being regarded as 1000. When first discovered, rhigolene was extensively used, particularly by dentists for producing anæsthesia by local freezing, but it seems now to have been almost totally abandoned, probably from the fact that its action is so rapid that only the very superficial layers of skin are frozen; and since they act as non-conductors to the lower layers, the anæsthetic effect is of the most superficial character. Partly also has rhigolene been neglected from the idea which has been generally held as to its explosiveness. This probably, however, is a groundless fear, unless the vapor is mixed with air and brought near to a light. Our principal reason being, however, in calling attention to this substance, apart from correcting the error, implied in its description as a local anæsthetic, is to refer to three uses of this substance which have been recommended by Dr. B. W. Richardson in the *Lancet* for January 17th, 1885.

1. He found that camphor and spermaceti dissolved in rhigolene freely. He, therefore, made a saturated solution of spermaceti and rhigolene, and then added camphor until that ceased to be dissolved. The solution so formed was applied with cotton-wool to burns. The evaporation of the fluid gave instant relief to pain, and left over the surface a thin layer of spermaceti and camphor, which excluded air and formed an excellent dressing. One drachm of spermaceti and one drachm of camphor will dissolve in two fluid ounces of rhigolene.

2. He also found that the fluid would take up iodine. He used it consequently for making an iodine solution, and employed the solution for various purposes. Applied to the surface of a fœtid wound, it leaves the iodine on the surface in finest sub-division. Sprayed into the throat, it is very useful in malignant or fœtid ulceration, one or two injections of the spray being quite sufficient to leave a free portion of the iodine on the surface. Inhaled as a weak solution, it affords a means of allowing iodine to enter the respiratory tract, a little iodine always being carried over with the vapor. The strength of the iodine solution which he uses is five grains of iodine in one fluid ounce of rhigolene.

3. By shaking a strong solution of ammonia with the rhigolene, and then decanting off the water, he obtained an ammoniated solution which acts as an excellent antiseptic, the vapor of which can be inhaled. The same solution charged with camphor is very useful for the preservation, temporarily, of natural history specimens. Dead objects are perfectly preserved by putting them for a short time into a bath of the solution, letting the fluid escape as vapor, and leaving the camphor in the tissues.

THE LOCAL ACTION OF DRUGS ON BLOOD-VESSELS.

In a leading article in the February number of the THERAPEUTIC GAZETTE we took occassion to discuss the method of experimentation, invented by Dr. W. H. Gaskell, to determine the action of drugs upon capillaries. It will be remembered that the principle of the experiment is to force liquid, under a known pressure, from the arteries through the capillaries into the veins of a tortoise, whose heart and nervous system has been destroyed, and to measure the rate of flow as an indication of the size of the vessels—a slowing of the flow being considered as proving contraction of the arteries. A very serious fallacy underlies this method of investigation—a fallacy which we believe has not hitherto been pointed out, and whose existence did not occur to us at the time of writing the article referred to. This source of error is the possibility that the rate of flow may be affected by the physical alteration in the liquid used. With an alkaloid, or similar principle, employed in minute quantities, the

probabilities are that a fallacy of this nature would be of very little importance; but, assuredly, when large quantities of an extract are being used, the difficulty of judging becomes serious. This is well illustrated by the experiments of Professor Sidney Ringer and H. Sainsbury (*Brit. Med. Jour.*, Jan. 1884) upon ergotin. The results of these experiments are certainly contrary to the previous drift of our evidence in showing that ergot acts locally upon the vessels. It was found, however, that the addition of ergotin to the saline solution used had no distinct effect upon the rate of flow until there was ten-per-cent. of the extract in solution. Of course under any circumstances, with a uniform pressure and a uniform resistance a thick molasses would not flow as readily through small tubes as a thin saline liquid, and ten-per-cent. of ergotin is enough very seriously to influence the viscidity of the saline solution. The slowing effect of the ergotin was, therefore, in all probability, the result of altered physical conditions. This conclusion, which is corroborated by the fact that the records clearly show complete loss of vitality in all parts of the tortoise experimented on—a loss of vitality which in all probability was shared by the arteries.

Under all the circumstances, we do not think that these experiments can be accepted as valid in their contradiction of the older results.

Reports on Therapeutic Progress.

THE ACTION OF PARALDEHYDE.

We have already, in one or two instances, called attention to the use of paraldehyde as a hypnotic. Still further information has been added to what we already know about this subject by M. Desnos (*British Medical Journal*, February 28, 1885), who has found that animals submitted to the influence of paraldehyde furnish evidence of its action on the brain, and especially on the gray substance. Hypodermic injections provoke symptoms of intoxication, preceded by a period of excitement. If the dose be increased, sleep is produced, which becomes deeper, and finally comatose; there is complete anæsthesia; reflex action is weakened, but does not disappear; breathing becomes shorter. Increasing the dose a second time produces death. The heart is not affected, unless very strong doses be administered; in this respect paraldehyde is preferable to chloral. M. Desnos tested the effect of paraldehyde on sixteen women and twenty men; the doses administered varied from two to four grammes; if sleep did not result, a stronger dose was also unsuccessful. Among the thirty-six patients thus treated, who suffered from different maladies, there were but few failures. Sleep generally lasted two, four, or six hours, according to the dose. Slight excitement precedes sleep, but there is never delirium. It frequently happens that sleep returns after the patient has discontinued the use of paraldehyde. Dreams rarely trouble the sleep obtained from paraldehyde. In relieving pain, it is inferior both to chloral and to morphine; nevertheless it is sometimes specially efficacious. In a case of persistent occipital neuralgia, which tormented an hysterical patient, paraldehyde gave great relief. Its effect on the alimentary canal is not always satisfactory; small doses may be tolerated, but when increased, cramps and vomiting frequently result. M. Desnos' experiments prove that fever-patients can be treated with paraldehyde with satisfactory results; this is a question hitherto left open to doubt.

Paraldehyde is becoming almost as fashionable as cocaine, if we can judge from the number of papers which have recently been published on it.

Paraldehyde ($C_6H_{12}O_3$) is a colorless liquid, having a smell something like that of spirit of nitrous ether, and a pungent, and by no means agreeable, taste. It has almost the same specific gravity as water, in which it is partially soluble (1 in 8). When added to water, it floats near the surface in large oily-looking drops. On shaking up the mixture, a kind of emulsion is formed if the amount of paraldehyde be in excess of the quantity which the water will dissolve. Paraldehyde is a polymeric modification of aldehyde (C_2H_4O), and is produced when anhydrous aldehyde is treated with sulphuric acid, gaseous hydrochloric acid, and some other agents. It was discovered by Weidenbusch in 1848, but its physiological properties were not examined till 1882. In October of that year, Dr. V. Cervello, of Palermo, published an account of his experiments made with it on man and animals, and announced that in paraldehyde we have a sleep-producing agent devoid of some of the evil properties of the soporifics in ordinary use. In Italy and Germany the drug has been used and reported on, for the most part favorably. In England and this country its therapeutic utility has been but slightly

noticed, and few records of its use have been published.

During the past eighteen months DR. D. J. LEECH (*Medical Chronicle*, February, 1885) has frequently employed it as a soporific, and was satisfied that within certain limits it is a drug of value, though it will not supplant our older hypnotics. Chloral, opium, and the bromides have their separate areas of usefulness, but there are gaps between them; there are cases in which we want a sleep-producing agent, yet feel that none of our ordinary remedies are applicable. Paraldehyde fills up one of these gaps, and may be given with advantage when there are objections to other hypnotics. In its physiological action and therapeutic application it resembles chloral more than any other drug, but it differs from chloral in that it does not seriously depress the circulation and respiration, except in quantities quite beyond the medicinal dose. Moreover, certain discomforts not infrequently present after the administration of chloral are almost entirely wanting when paraldehyde is given.

It chiefly influences the cerebrum, and its sleep-compelling effect on the healthy subject is both marked and rapid. Fifty minims given to a healthy man will usually cause quiet, but not very deep, sleep in five to thirty minutes if he be placed under favorable conditions: that is, if external sources of excitement be removed, but sixty to seventy minims are required, and larger doses will often fail to induce somnolence under unfavorable circumstances. In some a drachm will, under all circumstances, cause an imperious call for sleep which can scarcely be resisted. The soporific effect is occasionally seen after as little as fifteen minims. Paraldehyde sleep is preceded only by a sense of weariness and heaviness of the eyelids: it lasts two to six hours, sometimes more, and as a rule on waking up there is no discomfort. A "dazed" feeling is sometimes experienced, but it is less common than after the exhibition of chloral. If this last named drug fails to act as a soporific it is apt to induce unpleasant effects; but paraldehyde under similar conditions is rarely followed by uncomfortable sensations. This was well seen in a series of experiments made on six healthy students of the Owens College to determine the comparative effects on the pulse of paraldehyde in drachm doses and chloral hydrate in twenty-grain doses. Sleep was prevented by the repeated application of the sphygmograph. Some degree of headache or giddiness followed the administration of the chloral, but neither of these symptoms was complained of after the paraldehyde. When ninety minims were given, however, slight giddiness was in one instance felt. Three out of the six students experimented on felt a sense of exhilaration after drachm doses of paraldehyde, somewhat like that produced by a small dose of alcohol, and one of them, after ninety minims, thought he noted also that his powers of speech and locomotion were slightly interfered with, but this was not perceptible to those around. Cervello has shown that in the lower animals paraldehyde distinctly decreases the reflex excitability of the spinal cord, and in very large quantities depresses the sensibility of the skin as chloral is said to do.

Paraldehyde in doses of fifty to ninety minims sometimes affects the circulation distinctly. Its influence is first shown by a lower tension, an increase in the height of the percussion wave of the sphygmographic tracing, and a more rapid action of the heart. This effect is, in Dr. Leech's experience, best seen twenty to thirty minutes after the drug is taken; later on the pulse becomes slower than it was before the paraldehyde, and the percussion wave is at times less high. In three or four hours he has found the pulse give a normal tracing, though the breath indicated that paraldehyde was still present in the system.

A slight increase in the rapidity of the heart's action was noted in almost every case soon after the exhibition of paraldehyde. A subsequent decrease in frequency and force of the beat he has not unfrequently failed to find. The diminished frequency has been most noticeable one or two hours after the drug has been taken.

Cervello's experiments on animals indicate that paraldehyde has very little influence upon the heart itself. In the frog, indeed, he found that serum, even when overcharged with it, produced no other effect than a slight decrease in the frequency of action. In some experiments which he made with the isolated heart, the indifference of this organ to strong solutions of paraldehyde was not quite so great as Cervello states it to be, yet he found that the heart muscle like the other muscles of the body is influenced in a comparatively slight manner. In dogs and rabbits, too, Cervello found that the frequency of the heart-beat and the blood-pressure were not seriously affected by doses of paraldehyde which produced deep narcosis. His experiments show that the depressing

influence of paraldehyde on the heart is very much less than that of chloral hydrate. The heart of man is equally insusceptible to evil influence from paraldehyde. Dr. Leech has given it frequently in large doses to ten healthy subjects and as a soporific in disease. He has used fifty minims to two drachms above a hundred and fifty times without observing any ill effects on the circulation. His observations in this respect are in accordance with the experience of most all who have employed it. An instance of a slight depressant effect of paraldehyde on the heart has been mentioned by Brown,* and it is easy to understand, from the account which has been given of its actions in health, that the force and frequency of the heart-beat may at times be perceptibly reduced in disease. Langreuter, indeed, has seen slight irregularity of the heart's action follow its use, but this effect is very uncommon.

Paraldehyde in enormous doses destroys life by paralyzing the respiratory centre in the medulla, the heart continuing to beat after respiration has ceased; but Cervello found that it is less injurious to the respiratory functions than chloral hydrate, and in man no evil effect on respiration has been noticed.

In the undiluted form paraldehyde causes a burning sensation in the epigastrium, and even when dissolved in water it produces a decided sensation of warmth. Eructations not infrequently occur after its ingestion, but in the healthy subject it does not give rise to either sickness or vomiting. Both, however, occasionally follow its administration to those suffering from disordered stomach. It is readily absorbed by both gastric and rectal mucous membranes, and seems chiefly excreted by the lungs, for after its exhibition the breath is very distinctly impregnated with its odor often for many hours, and sometimes for a couple of days. An unpleasant taste of paraldehyde in the mouth is not infrequently complained of for a long time.

The effects of paraldehyde on the circulation point to its probable action as a diuretic in some conditions of the system, and Morselli† affirms that it sometimes acts as a stimulant to the kidneys. Dr. Quinlan‡ confirms this, but Dr. Leech has not met with any instance of decided influence in this direction, and Langreuter also could detect no diuretic effect, though he noted at times increased frequency of micturition.

On one or two occasions profuse perspiration has been seen to follow its use.

As a therapeutic agent the special value of paraldehyde resides in its power of procuring sleep in cases requiring a hypnotic, but in which chloral and opium are contraindicated. As compared with the first-named drug it has appeared less potent. It acts quite as quickly as chloral, but frequently fails to produce its expected results, especially if pain be present or the patient be in any way disturbed. Its use as a soporific is indicated:

1. When chloral seems called for, but the heart's action is so weak or irregular that danger may arise from any depressing cardiac influence. In the enlarged flabby or fatty heart, chloral is a dangerous remedy, but paraldehyde may be given without fear, and where there are anginal symptoms perhaps with advantage, because of its tendency to reduce arterial tension. In delirium tremens chloral is doubtless the best sedative which we can employ, and yet at times the weakness of the circulation indicates that its free administration is not quite devoid of danger, and the use of large doses of bromide of potassium is likewise objectionable. Now paraldehyde may be substituted for or combined with chloral in the treatment of this ailment with great advantage.

It seems especially useful in subduing the attacks of excitement to which those suffering from progressive paralysis are liable, and also in hysterical excitement; but it has also proved of service in acute mania and in almost all those conditions calling for the use of sedatives. There is no evidence that it is of greater value than chloral in overcoming the restlessness of insomnia which has so often to be treated in asylum practice; but it certainly may be substituted for chloral with advantage wherever there is a weak circulation as well as an excited brain. Langreuter speaks less favorably of its use than the two other observers, and considers that it possesses only one-third the efficacy of chloral; but in eighty-two per cent. of the 210 instances in which he gave paraldehyde it produced the desired effect. In fever where the heart's action is weak, paraldehyde may perhaps at times be substituted for chloral or opium with advantage; but in the only case in which Dr. Leech tried it, the result obtained was not satisfactory; the patient became slightly flushed and did not sleep.

Med Press and Circular, May 9, 1884.

†*Record*, March 15, 1883.

‡*Brit. Med. Jour.*, May 19, 1883.

2. When grave disturbance of the respiratory functions, from bronchitis or other causes, is accompanied by great restlessness and insomnia, sedatives of all kinds are looked upon with suspicion, and yet it not infrequently happens that it is necessary to induce sleep. Opium is out of the question, and bromide of potassium is usually ineffectual. Chloral may be given more advantageously, but its exhibition is accompanied with considerable risk.

3. When the administration of chloral is followed by unpleasant symptoms, paraldehyde may often be substituted with advantage for it. Sometimes the patient who has taken chloral suffers, on waking, from severe headache, almost more painful than want of sleep itself; or nausea, or giddiness, may follow. Slight discomforts do at times occur after paraldehyde. Headache, giddiness and nausea may be complained of, and in two hysterical cases Langreuter noted slight delirium on awaking from paraldehyde sleep; but, as a rule, discomforts are much less frequent and severe after paraldehyde than after chloral, and when the latter drug has caused ill after-effects Dr. Leech has given paraldehyde with good results.

4. When slight conditions of insomnia are present, paraldehyde has often an advantage over chloral or opium; for evils sometimes arise from commencing with the use or these two drugs, which prevent us resorting to them in all cases where a sedative seems desirable. In hysterical people especially, should the milder sedatives fail, we often elect to allow a patient to suffer from the discomfort of insomnia rather than take the responsibility of risking the development of a morbid craving for chloral or opium. Now, in such cases, we may give paraldehyde with every hope of success, and without fear.

As compared with opium, paraldehyde has a disadvantage which it shares with chloral. Its anodyne effects are feeble, hence it often fails conspicuously to relieve sleeplessness dependent on pain or cough. At times, indeed, it does act as an anodyne in neuralgia and other painful affections.

Whilst paraldehyde has certain advantages over other soporifics, it has some disadvantages. Its taste is objectionable, to some particularly so, and it sometimes causes an unpleasant taste in the mouth long after it has been taken. Then, too, if the stomach be at all irritable, it is apt to cause sickness or even pain and vomiting, and not infrequently patients will decline a second dose on account of its taste and the nausea it causes. Others, however, prefer it to chloral in every respect. Its odor can be perceived in the breath for hours after it has been taken.

Notwithstanding these defects, however, paraldehyde will prove a useful addition to our therapeutic resources. If it be indiscriminately used instead of chloral, it will soon be cast aside, since it is the less powerful of the two; but if its employment be limited to the cases for which it is specially applicable, its value will soon become generally appreciated.

With regard to its administration, as it is a nauseous drug, it is desirable to mask its flavor as much as possible. For this purpose many formulæ have been suggested. It forms an emulsion with powdered acacia, and may then be mixed with syrup of almonds, so that an ounce will contain 40 ℥. Mixtures of paraldehyde with oil and alcohol have also been recommended, but Dr. Leech prefers the following form:

℞ Paraldehyde, ℥ L.
Syr. Aurantii, ʒ ii.
Aquam ad, ℥ i.
Fiat haustus.

Dr. Quinlan recommends the addition of spirit of chloroform to a similar but more dilute solution. Paraldehyde may be given in capsules. Taken a little while after food, these capsules burst in the stomach without producing more than a trifling sensation of warmth; but if the stomach be empty, the sensation of heat which they cause on breaking is somewhat unpleasant, though only of short duration.

If paraldehyde induces stomach discomforts, it may readily be administered by the rectum. Subcutaneous injections of the drug are not advisable, as they produce considerable pain.

As a rule, it is well to begin with a dose of fifty minims. Less than this may be effectual at times, but more is often required.

ACTION OF NITRITE OF SODIUM AND NITRO-GLYCERIN.

The scantiness of medical agents available against the paroxysms of angina pectoris renders any additional investigation concerning the remedies applicable in that affection particularly interesting and noteworthy. An exhaustive essay read before the society of physicians of Berlin by Dr. Lublinski and reported in the *Deutsche Medizinal Zeitung* (Jan. 15th, 1885) presents some instructive

and previously unpublished data regarding the history and clinical uses of some of the principal remedies resorted to in angina, i. e., nitrite of sodium and nitro-glycerine. Lublinski, induced by its successful administration by Matthew Hay in a case of angina pectoris, has employed the nitrite of sodium in asthmatic affections and obtained sufficiently favorable results to recommend further trials of the drug. The first systematically conducted investigations of the physiological action of nitrite of sodium are recorded by Barth, who experimenting with Chili saltpetre was surprised to find the drug possessed of marked narcotic properties, even sufficiently powerful to cause the death of the animals experimented upon. The presence of nitrite of sodium, determined in the post-mortem examination after these experiments with the nitrate, was explained by the doctrine of Schœnlein and Gescheidlen, viz: that albuminates, hydrate of carbon and all living animal tissues were capable of reducing nitrates to their respective nitrites. But little was then known of the action of nitrites on the animal economy. Gamgee announced the action of nitrite of sodium on the blood to be perfectly analogous to that of nitrite of amyl, expressing itself externally in the well-known change of the color of the blood to a chocolate hue; the oxygen, however, not being, as might be supposed, expelled, but on the contrary fixed so firmly as to resist elimination by carbonic acid gas. Barth asserted that the drug was not only a blood-poison but also had a direct action on the nervous system. The observations of Binz on the action of the drug claim particular attention. He found that all animals experimented upon soon showed a state of fatigue and apathy, deepening in some instances into complete muscular paralysis and profound narcosis; dilatation of the pupil, salivation, vomiting, hurried respiration and retarded cardiac activity were also notable. Death ensued invariably without convulsions, even when dyspnœa was very pronounced. Accompanying laxative symptoms were ascribed to the irritative action of the drug on the intestinal tract. Reviewing then the single features in the action of nitrite of sodium, we find its energy expressed by two distinct phenomena, viz: a depression of the central nervous functions and the failure of the respiratory capacity of the hæmoglobin.

Taken internally, in a dose of about six grains, nitrite of sodium causes an almost immediate and rapid acceleration of the pulse, lasting several hours, slight flushing of the face, sensations of warmth, moderate fullness in the head and pulsation of the temporal artery — symptoms which almost coincide with those produced by nitrite of amyl.

A third remedy against angina pectoris is still to be mentioned, which, however, on account of the danger attending its preparation, will possibly never attain great popularity among the proression, viz., nitro-glycerin. This drug, known to homœopathists under the name of glonoin, was recommended, as far back as 1858, by Field against various neuralgic and nervous affections, but had not been subjected to an accurate examination of its physiological action until, in 1875, the Academy of Sciences, of Paris, made it the subject of a careful investigation, and announced it as a violent poison, requiring the utmost caution in its use. On the recommendation of Murrel in 1879, and subsequently of Huchard, the remedy gained some reputation against heart affections and angina pectoris. Twenty drops of a one-per-cent. solution of nitro-glycerin in alcohol are diluted with seven ounces of distilled water, of which three tablespoonful-doses are administered daily. The physiological action of the drug manifests itself a few minutes after its ingestion, chiefly on the circulatory apparatus, the apex-beat being more distinctly visible and palpable; the cardiac sounds grow loud; the temporal artery pulsates; the pulse-rate increases ten to twenty beats; besides, paralysis of the vaso-motor nerves and subsequent dilatation of the vessels cause a flushing of the face and hyperæmia of the skin and eyes. Occasionally headache, photophobia, ringing in the ears, and similar evidences of cerebral congestion, even including coma, have been observed. Hay holds that nitro-glycerin, which is practically a trinitrite of glycerin, is decomposed by the blood and other alkaline liquids of the body, and nascent nitrous acid thus liberated.

Understanding, then, that the active principle of the three remedies is identical, their physiological action presenting but slight differences, the therapeutist has to select that one which, besides greatest promptness in action, is attended by the least unpleasant symptoms. Nitrite of amyl seems *a priori* objectionable on account of its volatility, the short duration of its physiological impression, and unpleasant secondary symptoms attending its use. Nitro-glycerin has the advantage of being almost tasteless, and applicable subcutaneously (thirty drops of one-per-

cent. alcoholic solution in f 3 ij. gr. distilled water), but is open to the objection of causing loss of appetite, vomiting, and comatose conditions, besides showing a great diversity of action in different individuals on account of differences in its preparation. Its action on women and feeble individuals, also on an empty stomach, has at times been alarmingly energetic.

In the light of these objections to the exhibition of both of these remedies, the announcement of Matthew Hay that nitrite of sodium closely approaches in its action nitro-glycerin, without sharing the objectionable features of the latter, appears to us a valuable fact.

This new remedy, though, is by no means an indifferent one, but requires, on the contrary, a most careful attention to the dose; the preparation itself has to be reliable and free from saltpetre. The dose ought not to exceed ⅛ grain at the beginning, but can be increased to two and three grains. The taste is not unpleasant, the digestive tract is scarcely ever affected. It seems advisable to first exhibit nitrite of sodium, and then if the drug should fail to act, to resort to nitro-glycerin.

The principal affection in which both remedies are applicable is angina pectoris, no matter whether the disease be of a purely functional nature or depending upon organic lesions. Dr. Lublinski, of Berlin, reports a perfect success in seven cases out of nineteen with nitrite of sodium; the remaining cases did not improve under any other treatment, except one case, which was cured by nitro-glycerin continued for three weeks. A second indication for the exhibition of both remedies is furnished in cases of weakened heart, in which, by lowering arterial tension, the work of the cardiac muscle is decreased. In nervous palpitations, even if accompanied with a valvular lesion, Lublinski has also achieved very gratifying results. Regarding asthmatic affections, the drug has failed almost completely in the emphysematous types, but acted remarkably promptly in the bronchial and nervous forms. Lublinski states that he cannot speak too highly of the beneficent effects of both drugs in hemicrania, especially of the angio-spastic form, having cured forty cases of this affection that had resisted any other kind of treatment. The results, though, obtained with the remedies in epilepsy were very unsatisfactory.

LOCAL TREATMENT OF SUPPURATIVE OTITIS.

Purulent inflammation of the middle ear is well known to be one of the most ordinary affections of the ear, showing itself chiefly in children and in absence of any topical treatment lasting usually for years. As it not infrequently leads to deafness more or less complete and occasionally gives rise to grave complications involving the meningeal membranes and brain, prompt local medication is undoubtedly preferable to a mere attendance upon the general state of health, though in very many cases, however, the otitis results from some general disorder. Fortunately the progress of therapeutics has placed in our hands a variety of remedies of sufficient reliability to render the prognosis of nearly all cases very favorable.

The present mode of treatment of otitis, as presented by Dr. Aysaguer in the *Bulletin Général de Therapeutique*, of January 1st, 1885, has the double advantage of being more satisfactory and briefer in duration than those formerly resorted to. His routine method, which is equally well adapted to old as to recent cases, consists in antiseptic medication preceded by several well-directed injections of luke-warm salt-water. Nine grains of boric acid, finely powdered, are blown into the meatus toward the tympanic membrane by an ordinary thin glass tube, or Politzer's insufflator, and the meatus subsequently closed with salicylic cotton. This insufflation is to be resumed each morning until the powder of the previous application presents a perfectly dry appearance and thus indicates the cessation of the purulent discharge. After an interval of several days another insufflation is then made, and if the powder remains dry for several additional days, suppuration can fairly be supposed to be at an end. The results obtained with this very simple procedure are often marvelous, a complete cure being usually accomplished within several weeks. Politzer and Bezold, whose names are well known even on this side of the Atlantic, speak of this treatment in very enthusiastic terms. Aysaguer reports a complete cure in a case of several years' standing with but five or six insufflations. In certain rebellious cases, however, where the antiseptic method is found to fail, the caustic or alcoholic methods ought to be tried, in very recent cases the caustic first.

The alcoholic treatment, recommended by Lowenberg and Weber, consists in making instillations with rectified alcohol, but as pure alcohol is liable to cause severe pain, it is ad-

visable to make the first few instillations with a solution composed of one part of alcohol to two parts of water, and to gradually employ the more concentrated alcohol. The caustic treatment proposed first by Schwatze, consists in the employment of a concentrated solution of nitrate of silver, fifteen grains of the salt to half an ounce of water in the beginning, and to two drachms later, being used. The injection ought not to be allowed to remain longer than two minutes in the ear, and should be promptly followed by an injection of tepid salt-water. It is evident that this form of treatment need not be continued so long as the other one; often a single cauterization will probably suffice. The employment of iodoform offers no advantage to these methods, and is on account of its unpleasant odor very repulsive to some patients.

Three simple modes of treatment then, vouched for by acknowledged authorities, enable the general practitioner to successfully undertake the cure of cases without the aid the specialist.

IODOFORM IN SYPHILIS.

The introduction of iodoform in the treatment of syphilis and venereal affections is not of recent date, for it was already long used by syphilographers, both locally in the various forms of ulcers and, internally in constitutional syphilis, before it became the now so much used almost universal agent in the dressings and after treatment of surgery. Because of the large percentage of iodine it contains it was soon substituted for the iodides of sodium and potassium in the treatment of the numerous syphilitic diseases, and so was first highly recommended by Zeissel as an internal remedy in the therapeutics of this disease; but as it is not readily soluble, thereby not easily digested and causing, hence, intense irritation of stomach and intestinal canal, it has not found general favor as an internal agent. But in spite of these draw-backs it must be acknowledged to be of great benefit in this disease, especially in lessening those severe deep seated pains of the tertiary form; it is true, often, first after continued use. In 1870, Bozzi introduced the hypodermic iodoform treatment of syphilis, and soon after experiments were made in the Vienna clinic, the injections at first contained of iodoform 1 to 20 of ol. oliv. which proved to be too small a portion of the drug for each injection, and thus were followed by the following solution: iodoform, 1; olei ricini, 15; 1: ether, 6; 1: ether and ol. olivas, aa. 5, and finally suspensions of 6:20 glycerin.

These injections were made both in animals and persons, and from careful observations it was learned that of the ethereal solution four centigrammes were absorbed in both, while of the suspensions, the animal system took up two centigrams, and that of man four centigrams of iodoform daily. The light form (maculo-papular) of the stage of eruption disappeared rapidly after from twenty to thirty injections, while the papular and especially pustular varieties offered greater resistance to this method of treatment, and required a larger number of injections. The pains due to syphilitic periostitis were completely arrested in all cases after from one to two injections. Of all cases treated by this method but two presented recurrences, and both these exhibited before treatment was begun macular exanthemata and papular on the genitalia, both disappearing after respectively, nineteen and twenty-five injections: the recurrence consisted of scaling papulæ which vanished readily after but few injections. Like iodine, iodoform is of the greatest value in the late forms of syphilis, which the following cases, reported by DR. FENNELL in his Vienna letter to the *Cincinnati Lancet and Clinic* for March 21, 1885, might illustrate:

Patient 24 years, poorly nourished, whose syphilis had been treated by fifty-five mercurial inunctions. Upon entering the clinic presented a pustular eruption, and a large number of ulcers covered by thick scabs. He was treated by iodoform-ether injections 1:6. While under treatment, after the twelfth injection, there occurred a very severe periostitis of both tibiæ, which disappeared after the fifth injection. When fifty injections had been made, the greater portion of the pustular efflorescences had disappeared, leaving in their site dark brown pigment spots. On the back, however, which was covered with numerous serpiginous ulcers, they continued to enlarge, and not before one hundred injections (in which 7.2 grams of iodoform had been used) were made, had all the lesions of the skin vanished. There was an increase of weight of two kilograms during the cure.

In a second case which was under treatment about five weeks, 2.5 gram of iodoform was introduced in thirty injections. Here was present a large gumma with great destruction over the right orbital arch, periostitis of nasal bones and alveolar process of the left supra-maxiliary bone, all of which had been cured in about forty days.

A third case was marked by a row of serpiginous ulcers on the forehead, which were healed by twenty-five injections (of iodoform 1:5 aa. ether and ol. ricini) in the course of forty-three days. It is not to be inferred that iodoform injections are therefore to be considered a panacea, but only another method of often obtaining favorable results, even if long continuance be requisite in the treatment of such a disease as syphilis, which so often resists all agents.

Of much greater importance, however, is this remedy in the treatment of buboes, and here it is a most powerful aid to cure. We must differentiate several stages of the diseased lymphatic glands, which must be treated respectively by iodoform in various vehicles. If there is present a proportionate small destruction of the gland tissue, the remainder of the gland intact, and only a small point of fluctuation,then it was found sufficient to puncture,and,after draining off the pus,to introduce either iodoform-gauze or bougies (iodoform puri 1, 0, gelatin qu. s. ut. f. bacilli longitudin. 5, c. m., crassitudin. 5. 0. m. m. No. X).

With a few exceptional cases these were all cured in a week, and it was only necessary to occasionally brush the readily bleeding granulations with an astringent to promote healing.

But whenever the suppuration in a gland was at all extensive, and the skin overlaying it still intact, then the cover of the abscess was split lengthwise, and after draining off the pus the cavity was filled with iodoform-gauze. Again when the skin was thinned, reddened and livid, it was removed by means of the scissors. If the gland underneath it was hypertrophied, it was taken away either by means of the elastic ligature or sharp spoon, and then iodoform-gauze likewise added materially to the rapidity of the granulation formation; the bleeding, dark red, spongy granulations that showed no tendency to cicatrize were penciled with astringents to promote scabbing.

The action of iodoform injections into indolent lymphatic glands was also marked, as they either caused a rapid decrease of the volume of the gland, and that in from two to four days, or they produced suppuration, and the puncture of the skin then allowed the pus to flow off, and the cavity closed in a few days. After an injection into superficial, enlarged glands, over which the skin had already sloughed, a marked decrease in size could be observed. In circumcision, for both venereal and indurated sores, the gauze was found to be a very beneficial bandage. In Vienna it is used in venereal sores, ulcerated chancres, papular and serpiginous ulcers locally; and here it is especially the iodoform spray (1:6 ether sulph.) by means of which it is brought in contact with the surface of the sore minutely divided, so that in one case, after three spray applications, eight chancroids of pea-size, with characteristic fatty base, were healed, and that in four days.

Dr. Fennel writes that he has never seen any dangerous effects of iodoform, no matter in what form it was employed; in the internal administration there never occurred toxic phenomena, neither symptoms of iodine poisoning nor irregular breathing. Iodoform odor and taste were the only symptoms of intoxication which interfered with digestion. In three cases in which large suppurating cavities were formed from sloughing buboes, and which were packed with gauze, there occurred erysipelatous reddening and swelling, which disappeared, however, upon the removal of the gauze. He is therefore of the opinion that iodoform must be considered an excellent remedy in the treatment of syphilitic and venereal affections.

To conclude, he states that out of two hundred and fifty cases of buboes treated by iodoform, in only a very few complications occurred, while previous to its systematic use, for instance, 1879, in spite of the adoption of the most stringent antiseptic measures, and the greatest possible cleanliness, out of one hundred and sixty-eight cases of glandular affections erysipelas occurred in fifteen.

ON THE VALUE OF NATURAL MINERAL WATERS IN HEART-DISEASE.

There is a singular difference of opinion existing in the profession as to the positive value of natural mineral-waters in disease. While their usefulness cannot be fairly denied in several affections, in which their components meet certain definite indications of the pathological process, their alleged value has been justly questioned in organic lesions of high grade, such as heart-disease, by Oertel in an able essay appearing in Ziemssen's *Handbuch der Allgemeinen Therapie*, 1884, vol. 4, pp. 23 and 277. He pointed out the utter uselessness of the mineral waters containing alkalies, salines or iodine, or of any other water regimen, in heart-disease, as the affected circulatory apparatus precluded a proportionate excretion of the ingested liquids, thus

heightening the baneful results of the already disturbed equilibrium of the circulation. GLAX expresses an identical view in the *Centralblatt für die Gesammte Therapie*, Jan., '85, unless with the important, and in his judgment essential, provision, that attempts be made at reeëstablishing the hydrostatic balance. If, however, Glax holds, the normal relations between the ingested and excreted liquids be restored, beneficent results, such as increased diuresis and disappearance of dropsical infiltrations, have frequently been observed to result from the exhibition of cold carbonic waters. Rörner, besides, has demonstrated the successful application of this principle during his clinical experience in Graz; he measured the quantities of ingested and excreted liquids during twenty-four hours, and made up any existing difference by reducing the ingestion until the equilibrium was restored. The reduction of liquids did not affect the patients unpleasantly, if the warm liquids were first withdrawn, and small quantities of fresh water allowed to quench the thirst. Both Rörner and Glax report most gratifying results from this procedure in heart-disease, without any further medication. Cold and carbonic acid prove undoubted stimulants of diuresis, the former by causing vascular contraction and increased velocity of the blood-current; the latter by favoring the resorption of water, and thus giving rise, according to Quincke, to a quicker secretion of urine. Even the salts, provided they are not given in quantities producing ample evacuations, cause increased urination. Glax records a number of interesting cases of disappearing œdematous and dropsical swelling, under this treatment, of which we select two:

Case 1.—Miss S., æt 18, suffering of congenital mitral insufficiency and ensuing general dropsy; drank thirty-eight liquid ounces on an average daily, with a daily excretion of but seventeen ounces; ingesta were reduced to twenty-eight ounces per diem, consisting of ten ounces of cold milk and eighteen of *Tempelbrunnen* water. Diuresis increased rapidly, the ingestion of forty-two pints during twenty-three days being followed by a discharge of forty-two and three-quarter pints, which led to the complete disappearance of the dropsical infiltration.

Case 2.—Mr. W., æt 54; suffering of chronic Bright's disease with ascites, hydrothorax and œdema of the lower extremities. All liquids were withdrawn except small and frequent doses of Tempelbrunnen water. Dropsy disappeared gradually; the patient had ingested one hundred and seventeen pints during thirty-nine days and discharged one hundred and thirty-seven pints.

It is evident that in atheromatous affections, from lack of sufficient powers of accommodation on the part of the vessels, the system cannot tolerate the stimulation of cold and carbonic acid gas, which in fact might easily produce apoplexy; the same contraindication to the use of the mineral water treatment exists in interstitial nephritis after marked changes of the blood-vessels have taken place.

To epitomize then the doctrines derived from Glax's essay we learn that cold springs, of an alkaline, saline nature, and rich in carbonic acid gas are advantageously exhibited in disturbed conditions of the circulatory system, provided the powers of accommodation of the blood-vessels be still intact and the restoration of the hydrostatic balance be attended to.

APOMORPHINE IN NERVOUS AFFECTIONS.

The pathological understanding of a good many affections of the nervous system being still imperfect it is not surprising that their treatment remains correspondingly unsatisfactory. Among the remedies employed in the treatment of nervous troubles apomorphine has recently claimed considerable attention. WEILL used it successfully in a case of singultus in a patient affected with tubercular meningitis. The singultus appeared about forty times in a minute, preventing all sleep, and did not yield to electric stimulation of the phrenic nerves, to morphine administered internally or hypodermically, or to atropine.

Equal success, as Weill reports in the *Lyon Médicale*, 48, '84, attended its exhibition in a case of chorea in a boy of thirteen years of age. The affection was so severe as to cause insomnia, dysphagia and emaciation. Applications of ether to the spinal column, Fowler's solution hypodermically, bromide of potassium in large doses (ninety grains), chloral-hydrate (sixty grains), and prolonged warm baths, remained all powerless to remove the ailment. Small hypodermic doses of apomorphine (two and one-half mgm.) produced a sleep lasting fourteen hours, but no nausea nor vomiting. Next day the patient had improved, and continued to do so under the effects of the drug. The fact that emesis occurred only twice during the employment of apomorphine for nineteen days shows that

the beneficent effects it produces are entirely independent of this process. As a third instance of the successful use of apomorphine, Weill reports a case of cortical epilepsy in a boy of thirteen years of age. The paroxysms had occurred for a year, once or twice per week, and since the last six months twenty to thirty times daily, and were diagnosticated as resulting from a functional disturbance in the psychomotor zone of the right hemisphere. Oxide of zinc, bromide of potassium and hyoscyamine did not influence the affection in the least. Subcutaneous injections of apomorphine, continued for thirty-eight days, caused the disappearance of the paroxysms; vomiting, though occurring, could not be regarded as *conditio sine qua non* in this case. Dr. Lawrence, as reported in the *Lyon Médicale*, 45, 84, also cured with apomorhoine a case of hereditary hystero-epilepsy that had resisted every other treatment.

THE SIGNIFICANCE AND TREATMENT OF HÆMOPTYSIS.

Fifty years ago the patient who had once suffered from hæmoptysis was looked upon as a doomed man; but now-a-days a very different degree of importance is attached to this symptom, though it is nevertheless looked upon as a very grave occurrence, not so much on account of its immediate results, as because it is supposed usually to indicate the existence of pulmonary phthisis. Also it is supposed by many that the blood poured out into the pulmonary vesicles, and smaller bronchi is able to set up secondary pneumonia, which may terminate in phthisis. Dr. Alfred Drysdale (*Med. Press*, Jan. 21, 1885), however, believes that this last never occurs as a sequel of hæmoptysis, notwithstanding the many assertions to the contrary.

When signs of pneumonia follow an attack of hæmoptysis, Dr. Drysdale believes that in all cases the patient would have been found to have previously had well-marked phthisical symptoms; and in fact he states that pneumonia never follows hæmoptysis in patients in whom there have not been well-marked lesions of the lungs previously existing; and when hæmoptysis occurs in otherwise apparently healthy subjects, he has never seen it followed by secondary pneumonia. He believes that this distinction between these different forms of hæmoptysis is especially important on account of the different treatment required by different cases.

He divides all cases of hæmoptysis into three classes:

1. Those in which it occurs suddenly, without any antecedent physical symptoms; and in others who, though not exactly robust, are free from tubercular or other disease. In these persons the hæmoptysis does not depend upon any lesion of the lung, or upon inflammatory conditions, but is due to some disturbance of the circulation; and the predisposing causes are a weakly and ill-developed frame, sedentary habits with full diet. The treatment which he recommends to be adopted in these cases is the following: The patient must be encouraged to take exercise in the open air, without waiting for the cessation of the hæmoptysis; for this, far from being encouraged by movement, as we are led to expect by those who enjoin complete rest, is stopped by it. Dr. Drysdale holds that many of such cases treated by complete rest in bed will continue to expectorate blood for weeks; while on the contrary, if they are allowed to take exercise, it will cease entirely in a short time. The diet must be moderately sustaining, and small quantities of stimulants should be given. Cold baths, followed by friction with rough towels, is also of great benefit. Not only a "guarded," but a "confident" prognosis may be pronounced in these cases, provided that the after-treatment of the abandonment of a sedentary occupation, etc., be strictly followed. No fear need be entertained of that unsubstantial spectre, "phthisis ab hæmoptyse."

2. Where it occurs in patients who have had previously well-marked phthisical symptoms, with usually the physical signs of consolidation, or even cavity. In these cases the hæmorrhage is not great in amount, and is due to the engorgement with blood of a fresh patch of lung, as the first stage of inflammation. The treatment is that usually recommended indiscriminately in all cases of hæmoptysis, viz., resting in bed, suction of ice, low diet, etc. The ultimate prognosis is of course very grave, though with proper treatment a certain proportion of cases recover.

3. This form occurs in patients in an advanced stage of phthisis, and is due to ulceration through a tolerably large vessel in the walls of a cavity. Here the hæmorrhage is very profuse and obstinate, and often produces death in a few minutes, either from asphyxia or syncope from loss of blood. The first step in treatment is to raise the back and shoulders of the patient so as to obviate the occurrence of asphyxia from obstruction by the blood to the entrance of air in the trachea.

This step may seem tolerably obvious, but loss of life may occur from its neglect. The patient must be kept absolutely at rest, fed with iced liquids, ice-bags being applied to the chest, and large doses of astringents (the best of which is gallic acid) given, and solutions of ergotin injected sub-cutaneously. This is the best that can be done for such cases; it need not be said that the best is but little, and that the last state of these patients is worse than the first.

DEATH AFTER THE USE OF ANTIPYRINE.

Antipyrine is one of those remedies which will probably take a prominent place in the materia medica of the future, and it is, therefore, the more necessary to publish cases where untoward results have followed its use. As a rule, it appears to be a drug whose administration is unattended by unpleasant symptoms; though vomiting, a peculiar exanthematous rash resembling measles, and in rare cases collapse, have followed its use. We have already, on several occasions, referred to the remarkable power possessed by antipyrine in reducing the temperature and the frequency of the pulse and respiration in fevers, while we have further called attention to the fact of its lack of anti-periodic powers. In the *Lancet* for Feb. 28, 1885, there is published an account of a case occurring under the charge of DR. BARRS, in the Leeds Fever Hospital, in which the use of antipyrine produced collapse which proved fatal. The case was that of a woman thirty-five years of age, who was admitted to the hospital six weeks after a miscarriage in the fifth month of pregnancy. During all that time she had been confined to bed, suffering from pain in the lower part of the abdomen, vomiting, headache, and shivering, and, later on, diarrhœa. She was sent to the hospital as a case of enteric fever. No exact diagnosis as to the nature of the disease was made, beyond that it was not enteric fever, and was probably of a puerperal nature. Her temperature was $103\frac{2}{10}$. On the following morning after admission the temperature was $103\frac{6}{10}$, pulse 102, respiration 36, when thirty-five grains of antipyrine were administered at 3 o'clock p. m., followed three hours later by half that quantity; at 11 o'clock that evening the temperature was 98°, though her pulse remained at 132. No reaction setting in in the following twenty-four hours, brandy and various forms of stimulation were used, but without effect. The patient died thirty-two hours after taking the antipyrine. A post-mortem examination was made a day after death and revealed no pathological lesions, with the exception that the spleen was much enlarged and softened, and its middle third occupied by a large infarction broken down into a cavity in the centre. Kidneys also enlarged, and each contained two or three conical infarctions. Intestines intact in their whole length; uterus contracted and empty.

The chief interest in the above case lies in the effect of the antipyrine. From the day of admission to the time of taking the drug there had been uniformly a high temperature. Within three hours the temperature had become normal, or sub-normal, and did not subsequently rise until the patient was actually dying. It is recommended by those who have had most experience with the drug that thirty grains be given as often as every hour for three doses, or a single dose of sixty grains, in either case much more than the patient in question took. In the case of other adult patients in the same institution it is stated that single doses of twenty or thirty grains produced only a temporary remission, the temperature resuming its former height within four hours. It was with the view of preventing this rise that the second smaller dose was ordered to be given three hours after the first. This object was certainly effected, but, unfortunately, no improvement, but the reverse, took place in the other symptoms and collapse ensued. The chief attribute urged in favor of antipyrine is that dangerous symptoms never follow its use. May alone (*Deutsche Med. Woch.*, 1884) mentions a case of collapse after antipyrine, but in his case it was uncertain whether the collapse should be attributed to the drug or to the course of the disease. In the case above described, though the patient was undoubtedly very ill, there can be no question but that the extreme depression, accompanying the fall of temperature, was directly due to the action of the drug.

UTERINE DYSPEPSIA.

That symptoms do not constitute the disease, but are merely its surface-play, and that the rational physician must search for their underlying cause, is strikingly illustrated by the various forms of dyspepsia, all depending upon different reasons and calling for different modes of treatment.

Every practitioner has met with cases of gastric disturbances in females in whom the symptoms could not be traced to any organic affection of the digestive tract. In these cases, provided the general state of the circulatory and nervous system be intact, a careful examination will usually point to an existing irritation of the genital apparatus. In fact the disturbing influence on digestion of an irritation proceeding from the genital organs, has been experimentally established by FLEISCHER and KRETSCHY (*Berlin Klin. Wochenschr.*, xx, 13, p. 263). The secretion of the gastric juice especially was observed to be affected by menstruation, decreasing during its presence and becoming normal again after its disappearance, thus showing the sympathy of the digestive functions with the uterine organs. Besides it is known that irritation of the genital apparatus is transmitted by reflex action to the centre of vomiting, which, as held by Grimm and Greve, is possibly identical with the centre of respiration. The stomach derives its principal supply of motor nerve fibres from the pneumogastric nerve, a few fibres only belonging to the sympathetic system; lastly we find, as proven by Pflüger, motor inhibitory fibres supplied from the central nervous system to the Intestines.

Although the sympathy between the sexual and digestive apparatus through reflex action can thus be readily understood, we find that only certain definite pathological changes of the genital organs give rise to uterine dyspepsia. Among these we may mention changes in the position of the uterus, chiefly retroflexions, enlargements of the uterus (myoma, chronic metritis, pregnancy), ovarian tumors, deeply-seated cervical ulceration and pelvic exudations. Affections of the uterine mucous membranes alone do not cause such an interference with the digestive processes.

The principal symptoms of uterine dyspepsia are, loss of appetite, sour eructations, heart-burn, pain after eating, and vomiting, which in some cases repeats itself at every meal. Besides there are nearly always present some nervous symptoms, such as headache, dizziness, nervous asthma, and palpitation of the heart.

The differential diagnosis is not always easy; it can be mistaken for chronic gastric catarrh, gastric ulcer or carcinoma of the stomach. In chronic gastric catarrh, anorexia and the changes of the mucous membrane of the mouth are more constant and prominent. In gastric ulcer we find the pains of a paroxysmal type and the vomited matters mixed with blood; carcinoma could be diagnosticated by the tumor in the epigastric region and the absence of any irritation of the sexual organs capable of causing uterine dyspepsia.

The prognosis is usually unfavorable, as the affection can only be remedied by eliminating the causative agencies residing in the genital organs. Carbonic waters and alkalies are indicated on account of the increase of gastric juice. The diet ought to be light and strengthening but not irritating.

TRYPSIN AS A SOLVENT OF DIPHTHERITIC MEMBRANE.

At a meeting of the New York State Pathological Society, held December 24, 1884, DR. CHAPIN presented the lungs and bronchial tubes which had been removed from a child three years of age, dead of blood-poisoning from diphtheritic croup. It had been suffering from a bronchitis, and when, after some days, a diphtheritic patch developed on the tonsil, dyspnœa soon occurred, and demanded tracheotomy, which was done under difficulties. The child breathed easily after the opening had been made into the trachea and a false membrane had been expelled; but the next day dyspnœa began again, and in the afternoon was as severe as before the operation, although somewhat different in character. Dr. Chapin then threw trypsin into the tracheal wound by means of a coarse atomizer, and soon after the child again breathed perfectly freely. The use of the trypsin extract was continued during the night, but the child died the following day, not of dyspnœa, but of blood-poisoning. The autopsy showed that the membrane in the trachea below the opening was partially digested, and he thought the relief to the obstruction in the deeper passages had been affected by means of the digestive properties of the trypsin. Dr. Chapin had not found tracheotomy in these cases a simple operation, and in the present one there was a marked rise of temperature and pulse after the tracheal opening had been made.

In the discussion which followed, DR. J. LEWIS SMITH also stated that he had employed extractum pancreatis in six or eight cases, mixed with bi-carbonate of sodium, and had found that the faucial and laryngeal membrane had disappeared much sooner than usual. He was not prepared to say whether the result was brought about by

the trypsin or the bicarbonate of sodium, or both. In his opinion, we should perform tracheotomy even where there could be little hope of giving the child more than temporary relief, notwithstanding the possibility of increasing popular prejudice against the operation.

Dr. B. M. Van Syckel also recommends a trial of of trypsin as a topical application in diphtheria. Trypsin is one of the ferments of the pancreatic fluid. It will dissolve its own weight of fibrin in from five to ten minutes at a temperature of 37° C. (98.5° F.). Dr. Van Syckel has found that when the diphtheritic membrane, removed post-mortem, is immersed in a trypsin solution at a temperature of 37° C., "it becomes transparent and slightly swollen, with the exception of a small residue consisting of cells and possibly bacteria. This settles to the bottom of the glass, leaving the solution slightly turbid and mucilaginous. In cases where the membrane is still adherent to the surrounding tissue, the solvent action is slower, but no apparent change takes place in the healthy tissue." The solution is to be applied by means of the spray, applications being made every fifteen minutes if possible, or as often as the strength of the patient will permit, only a small amount of the liquid being used at each spraying. The importance of frequent applications should be impressed upon the parents or nurse, as upon this depends the success of the treatment. The writer states that the following extemporaneous preparation has been found very serviceable in his hands: 50 c. c. (℥ j. ʒ vj.) of a one to 1,000 solution of salicylic acid may be added to five grm. (ʒ j. gr. xvij.) of "extractum pancreatis," and the mixture allowed to digest in a water-bath at a temperature of 37° C. (98.5° F.) for four hours, then filter and make slightly alkaline by the addition of bicarbonate of sodium. The solution should only be made as required, as it will not keep more than one or two weeks.—*New York Medical Record*, February 21, 1885.

SELF-DELIVERY BY LAPAROTOMY.

One of the strangest cases, perhaps, on record in the annals of gynæcological practice, was reported by Dr. Guggenberg at the meeting of German physicians in Tetschen, Bohemia—the case of a confined woman performing laparotomy successfully on herself, the woman herself in perfect health being presented to the society. At two o'clock, as Dr. G. related, he was summoned to hurry to a woman who had cut her abdomen open. He found a woman of large and strong build, but of a thoroughly anæmic type, on a poorly-furnished bed, surrounded by unmistakable evidences of poverty. Examination of her eyes, which were lightly closed, revealed that her pupils reacted promptly to light and shadow; her pulse was scarcely perceptible; her consciousness, though not perfectly intact, was sufficiently clear to enable her to answer questions put to her by corresponding motions of her head. Examination of her body showed an incised abdominal wound running from above downward and inward, exposing a considerable quantity of intestines. The uterus was seen below, firmly contracted, of about the size of a child's head; bleeding had stopped altogether. Between her knees he discovered a dead child.

The parts having been carefully cleansed and the intestines replaced, the wound was sewed up and dressed antiseptically. Besides vomiting and moderate fever for a few days, no unfavorable symptoms appeared. The history of this case showed that the woman had seven previous confinements, all more or less of a severe type. This time the labor-pains had been so intense that the woman felt convinced that she had to die; and having heard or read of the Cæsarean section, she decided to perform it on herself, with the hope of thus gaining an easier death. She divided layer after layer, until a profuse hæmorrhage arrested her operation. A dark protruding mass was taken up, recognized as the afterbirth, and placed under the bed; finally a foot appeared, on which she dragged until the whole body had been drawn through the external wound. Having cut the cord, the woman lay down to die, but was shortly after discovered by her relatives in her precarious condition. She recovered completely, and is capable of performing the hardest kind of work.—*Wien. Med. Bl.*, Jan. 15, 1885.

CROTON OIL TREATMENT OF RINGWORM.

If the constant advocacy of new methods in lupus is an indication of the unsatisfactory results hitherto attained, *a fortiori* does the statement hold good for the treatment of ringworm. Scarcely a month elapses in which some new application for ringworm is not vaunted as being better than anything yet tried. Nevertheless there are few practitioners

who have not had occasion to experience that there are cases of ringworm which drag on, little affected by any mode of treatment. It is long since the treatment of ringworm by croton oil was advocated in France. Latterly its use, under certain restrictions, has been advocated by able and experienced observers in England and in this country. That croton oil frequently cures ringworm, is indisputable; and that there are cases in which the temptation to use it is very strong, must be freely admitted. The dangers of the method, however, are clearly shown by DR. THIN, in a paper published in the *British Medical Journal*, Feb. 28, 1885. He states that some years ago a boy, who had been twice sent home from school on account of ringworm, and whose career, from consequent inability to pass an entrance examination, was likely to be injured, was brought to him by his relatives, and the task was given to him to cure the ringworm quickly by any means, painful or not. He had entertained a prejudice against the croton oil treatment, but this seemed a case in which a trial was justifiable, and by its use the disease was, in this instance, rapidly cured. Other cases encouraged him to believe that he had overrated the risk of baldness attending its use. Subsequent experience, however, proved the justness of his fears.

In the *Journal of Cutaneous and Venereal Diseases* for July, 1884, M. Brocq writes thus from Paris in regard to the treatment by croton oil: "This procedure was formerly experimented with at the St. Louis Hospital, and, after numerous trials, it was rejected as inefficacious and dangerous; dangerous because a suppuration of the hair-follicles may determine an incurable alopecia."

Dr. Thin states that he has witnessed two examples of partial baldness produced by croton oil—one in the case of a boy aged eight years, in whom the resulting bald patch was somewhat larger than a shilling, although the disease in the other parts of the head was not cured. The other case was that of a young married woman, who brought him two children with ringworm, and who herself suffered from a patch of ringworm on the top of the head. Ringworm of the scalp, in an adult, is exceptionally rare. In this case the diagnosis was verified by microscopic examination of the stumps. The patch was carefully painted by Dr. Thin with croton oil liniment. Suppurative inflammation of the hair-follicles ensued, and the patch has remained permanently bald.

From his experience of the two cases, he considers himself justified in warning practitioners that, in using croton oil in the treatment of ringworm, they can never be certain that they will not cause baldness, and in expressing his doubts as to whether it should be employed in any case whatever. Fortunately we have other measures, which, if not always rapid, are yet, in the long run, efficacious. The principle to be followed in the treatment of ringworm, is the use of an agent which is not only antiparasitic, but which is at the same time gently stimulating; and the choice of an agent, and the strength in which it is used, must be determined by the practitioner for each individual case, care being taken that while a certain amount of irritation is set up in the hair follicle, the irritation shall not be allowed to pass certain limits.

THE THERAPEUTICS OF TYPHLITIS.

We find various modes of treatment prescribed in the text-books for typhlitis, according as the affection is caused by impaction of fæces, by inflammation of the vermiform process, or as existing as perityphlitis. In pure typhlitis stercoralis the indications call for a rapid removal of fæces by means of enemata or castor oil, while in all other forms the antiperitonitic treatment is resorted to. DR. HUCHZERMEYER (*Centralbl. f. d. g. Ther.*, 1, 85) condemns the evacuative treatment in all cases and advises the exhibition of opiates from the beginning, together with the ice-bag, or at least frequently renewed cold applications to the part. As long as the febrile stage lasted, nothing but water and wine with small pieces of ice was allowed to a number of his patients, who all soon recovered under this treatment. Opium was given in one-grain doses every two or three hours. This mode of treatment seems to us far superior to the routine method of first procuring evacuation. The most signal indication in any inflammation of a serous membrane is, undoubtedly, the limitation and isolation of the inflamed focus, which can only be obtained by complete functional rest of the part. But the removal of the fæces, however desirable, calls for violent peristaltic movements more dangerous in themselves than the presence of the fæces. Likewise, we can regard all kinds of food, even milk and amylaceous soups, during the acute stage of inflammation as more harmful, through the irritation they incite in the mucous membranes, than beneficient, even though strengthening the system.

Opium ensures complete functional passiveness of the part, *i. e.* causes local anæmia, both being subservient to the same purpose, the isolation of the inflammatory focus.

JEQUIRITY AS A REMEDY FOR GRANULAR LIDS WITH PANNUS.

Probably every physician residing at a distance from the larger cities has encountered, at one time or another, one or more cases of granular lids with pannus which have wearied his patience and baffled every attempt to cure them. When possible, every practitioner refers these cases to a specialist, and is glad to shift every responsibility for their care. But frequently circumstances render such a disposition of the patient out of the question, and the physician has to struggle along with the case as best he may. After many months of treatment with sulphate of copper, nitrate of silver, and other astringents, the eyes meanwhile getting no better, but if anything worse, the doctor gets tired of seeing the patient, whom he is not benefiting, and the patient gets tired of seeing the doctor, from whom he feels that he is receiving no benefit. So scientific treatment is abandoned, and perhaps the eyes are lost; or the patient becomes a ready prey of the peripatetic vender of eye-salves, eye-waters, and other nostrums.

Dr. David Webster (*Medical Record*, Feb. 14, 1885) points out that it is to just such cases that jequirity is applicable, and in many such cases its curative effects will be found to be little short of marvelous, though the remedy is not entirely free from danger, but should always be used intelligently and with care. Dr. Webster thinks, however, that if the following rules are observed, the remedy will be found efficacious, and its use will be attended with but little danger.

First, use the drug only in cases in which considerable pannus exists; second, use nothing stronger than a one-fourth of one-per-cent. solution; third, make the application only once a day, and do not repeat it after the characteristic inflammatory reaction begins to show itself.

It has been found by weighing a large number of jequirity beans that the average weight of each is almost exactly one grain and a fourth, so that if one bean is used to the ounce of water in making the infusion, a solution of nearly one-fourth of one per cent. will be obtained. The infusion should be filtered four or five hours after being made and should never be kept longer than a week. The infusion should be applied very thoroughly by means of a little cotton twisted about the end of a small stick, and then the patient should bathe the lids with the rest of the infusion for five or ten minutes. This process should be repeated once a day until the characteristic inflammation is produced. Ordinarily, however, only one application is needed, and the next day the patient will show more or less general febrile disturbance, the eyes will be irritable and watery, and the conjunctiva covered with a thin whitish membrane. When these symptoms appear, the application should not be repeated, but the eyes may be bathed from time to time with hot water, and if there is considerable pain, and a good deal of swelling of the lids, iced cloths and atropine may be used. The inflammation subsides in a few days, and with its subsidence the granulations and the pannus rapidly disappear. If after a month or two the improvement seems to have ceased and the cure is imperfect, some vascularity of the cornea still remaining, the application may be repeated with further benefit.

PULVERIZED VACCINE VIRUS.

As long as the ideal method of vaccination, *i. e.*, through pure culture and subsequent inoculation of the specific germ of variola or vaccinia is unattainable, our chief aim consists in assuring ourselves of the purity of the vaccine-soil and its greatest possible freedom from other organic matters.

Dr. Hager, of Neustadt, Magdeburg, demonstrated at the last meeting of German physicians, at Magdeburg, the process of obtaining and preparing animal lymph (*Centralb. f. d. g. Ther.* 1885) in the form of powder.

Dr. Reissner, of Darmstadt, was the first to introduce powdered animal lymph. According to his methods the pustules are scraped off and excised 120 hours after vaccination, then the mass is spread thinly on a glass-plate and, at an ordinary temperature, brought under an exsiccator. Two days after, the dried mass is pulverized in an agate mortar; then the powder is again brought under an exsiccator and finally prepared for use by making a paste by the addition of distilled water. As precautionary measures, both the region in the cow's body, whence the pustules are taken, and the dried lymph-mass

itself, are previously subjected to the influence of corrosive sublimate and salicylic acid, the activity of the virus remaining unaffected.

NOTE ON THE ACTION OF PARALDEHYDE, THE NEW HYPNOTIC.

Paraldehyde, which was first used as a therapeutic agent by Dr. Cervello, of Palmero, some eighteen months ago, has not received the attention it deserves. As a sleep-producer it stands in the same rank with chloral; while in anything like moderate doses it approaches in safety that safest of all sedatives, bromide of potassium. Dr. S. A. K. Strahan (*Lancet*, Jan. 31, 1884), has employed it over one hundred and fifty times in about twenty-five cases, and found but two patients who did not respond to medium doses of the drug. One of these was suffering from acute mania, and the other from severe facial neuralgia. He has given it in mania, acute and chronic, melancholia and dementia, the various stages of paralysis, during those periods of restlessness and sleeplessness so often met with in idiots and imbeciles, and in simple insomnia, and found it almost invariably a certain somniferent. Paraldehyde acts more quickly than chloral. When a dose is taken, a feeling of warmth, a kind of grateful glow, is experienced, and the patient is often asleep within ten or fifteen minutes. When it does not produce sleep it does not excite, but rather tends to soothe and calm an excited or depressed patient.

The sleep produced by paraldehyde is a nearer approach to natural sleep than that obtained by the administration of any other drug. It is light, apparently dreamless, and certainly refreshing; the patient can at times be wakened by a loud word or a gentle shake, and when so aroused does not display any alarm or confusion of ideas, and if left alone at once falls asleep again. During this sleep the breathing is somewhat slower and deeper than in the waking hours, while the pulse becomes slightly less rapid, and possibly stronger. The temperature (surface) is not changed, the flow of urine is increased, and the skin is not affected. No headache or other unpleasant symptom is experienced on waking, and the appetite is not injured even by the daily exhibition of the drug for considerable periods, in one of his cases for over three weeks.

The dose is from thirty to ninety minims, but more than sixty drops is seldom required to induce sleep; and this, or even a smaller dose repeated within an hour, is much more effective than a single large dose. The paraldehyde is best given as its first administrators recommended; that is, with a bitter tincture in sweetened water. It has a pungent taste, but a drachm when combined with fifteen drops of tincture of orange and an ounce or more of water sweetened with syrup, makes a not unpleasant draught, never in his experience causing nausea or vomiting. The drug is given off, principally or wholly, by the lungs, and may easily be detected in the breath for ten, twelve, or even more hours.

To sum up now all that can be said in favor of this drug. It is claimed to be an equally sure hypnotic with chloral, it does not in any case produce excitement before sleep, it leaves no headache or other unpleasant symptom on awaking, and it does not affect the appetite. These are all matters of not slight importance, but there is one advantage which this drug possesses over chloral, which at once gives it a place among our most useful hypnotics; and that is the absence of any depressing or paralyzing action on the heart. This absence of action upon the cardiac centre permits of it being given with perfect safety to general paralytics and others to whom chloral could only be given with the greatest caution and with constant anxiety as to the result of even small doses. The new drug may not take the place of chloral in everyday prescribing, but it must supplant it in those, unhappily numerous, cases in which the action of the sedative upon the heart is to be feared, and yet where sleep is so often so much to be desired.

CHOLAGOGUES.

Paschkis made some interesting experiments on several alleged cholagogues to determine their relative value (*Med. Jahrb.*, 84, p. 159), in curarized animals with a temporarily produced fistula of the gall bladder, the drugs being injected into the jugular vein. Chloride of sodium and grape-sugar, both dissolved in large quantities of water, were found to have no stimulating action on the biliary secretion; aloin, cathartic acid, podophyllin and podophyllotoxin, colocynthin, pilocarpine, croton oil, cholic acid, taurocholic acid, glycocholic acid and taurin, glycochol and ethereal oil of turpentine proved all ineffectual, excepting croton oil and the two biliary acids, which acted very decidedly. Either of these introduced into the blood of a dog causes an immediate and very marked increase of the flow of the bile, often amounting to double the quantity of the previous discharge.

COCA IN FATIGUE.

The occurrence of a seven days' walking match in Louisville furnished the opportunity for Dr. E. R. Palmer (*Amer. Practitioner*, Feb., 1885) for testing the advantages of coca in prolonged muscular effort. Dr. Palmer's experiments commenced on the sixth day of the race, when two contestants had already dropped out, and a third was on the point of withdrawing from the contest, as she was already about breaking down, her gait unsteady, walking with great pain and weariness, and her eyes sunken in her head and encircled by large dark rims. She had accomplished a little over 247 miles, leaving to be covered in 36 hours a little over 102 miles to save her being distanced, she being at that time 68 miles behind the next competitor in the race. She was prevailed upon to continue in the contest, and Dr. Palmer obtained control of her from her trainer, after the assurance that he believed he might restore her vigor, and possibly enable her to win her race, through the administration of coca. Accordingly, he administered to her a large wine-glassful of the wine of coca, and in twenty minutes afterwards a second dose. Dr. Palmer states that within thirty minutes after the first dose, her step was quick and elastic; she moved easily around the track, declaring that she felt like a new woman; of all the walkers she was now the freshest, and her time the best that was being made, her gait being nearly five miles an hour and well sustained. During all the remaining time she took the coca freely, it not appearing to disagree with her stomach at all, and its bracing power upon her muscular system being most manifest. In the last portion of the race she was accidentally pushed from the track by the contestants in a running race which was going on at the same time. She fell nearly six feet to the ground, and was carried to the dressing room unconscious, but with no seeming injuries. She rallied shortly afterwards, drank some coca, and although complaining of pain in the epigastric region, she insisted upon again taking the track, but was compelled soon to leave. She soon, however, returned, and, aided by the free use of the coca, kept steadily at her work, and finished the 350th mile, the distance necessary to avoid being ruled out of the race, with fourteen minutes to spare—having accomplished, therefore, over 102 miles in the last thirty-six hours, and that, too, after she was apparently completely broken down. From the time she began with the coca she took no other stimulant except a sip, at long intervals, of sherry and milk, and ate scarcely anything, owing chiefly to the poor quality of the food furnished. She continued to use the coca the day after the race; and on the third day, the coca having been withdrawn, there was a slight increase in the pulse, with some irregularity, which, however, shortly disappeared. This experiment seems strikingly conclusive of the efficacy of coca wine in physical fatigue in sustaining the bodily energies.

ON THE COMPARATIVE ACTION OF SOME PREPARATIONS OF MERCURY.

There is great diversity of opinion as to the most eligible preparation of mercury and most successful mode of its administration. Many practitioners, especially in Germany, still cling to the filthy but therapeutically active inunctions; others, again, prefer the sublimate, or employ one of the new mercurial preparations, such as the plaster, the soap, the oleate, or the blue ointment of the French pharmacopœia. Dr. Nega has made some comparative studies on the subject, which we find epitomized in the *Deutsche Medizinal Zeitung* of January 15th, 1885:

The plaster introduced by Unna and Beiersdorff showed evidences of a rapid and ample absorption of the metal, which in forty-six cases was detected forty-two times in the urine, occasionally as early as twenty-four hours after its exhibition.

The mercurial soap was used in quantities of forty-five grains daily. In some cases the metal appeared in the urine immediately after its application; in others not before from three to five inunctions were made. The elimination of the mercury was usually found to be uninterrupted, although in some few cases the metal could be found in the urine a month after the termination of the cure.

The oleate of mercury gave very favorable results regarding its absorption, and, as it is scarcely irritating to the skin and rarely causes salivation, it seems very eligible for the lighter forms of syphilis.

The "new blue ointment" (Ungt. hydr. dupl. *ph. gall.*, Le Bœuf), which is prepared without the addition of the old blue ointment, Nega regarded as the most reliable form of exhibiting mercury, especially in the graver forms of syphilis, the absorption being more rapid and ample than in all other mentioned preparations.

THE PREVENTION OF OPHTHALMIA IN NEW-BORN CHILDREN.

At the annual meeting of the Obstetrical Society of London, held February 4th, 1885, Dr. M'Keown read a paper on "The Prevention of Ophthalmia Neonatorum and its Ravages" (*Lancet*, February 21st, 1885.) The author pointed out that the text-books and lectures on midwifery should deal fully with the etiology, progress, and treatment of ophthalmia neonatorum,and that midwives should be taught and required to understand their duties with regard to the disease. Infective matter in the genital passages of the mother is a frequent cause, it has been stated to be the only cause; and hence attempts have been made to prevent the disease by treatment applied to the vagina before delivery, and to the child's eyes immediately after birth. It was also claimed that by vaginal injections the frequency of the affection had been diminished, and by some, that by treatment of the eyes, the disease had been prevented. Abolition of the disease was stated to have been obtained by Créde in 499 cases by washing the eyes with pure water, and then applying a two-per-cent. solution of nitrate of silver. At the Stuttgardt Maternity,by Créde's plan a large reduction in the frequency had been affected; (*a*) by the nitrate of silver treatment in the wards of Professors Carl and Gustav Braun, where, of more than 3,000 births, only 1.93 per cent. were affected, whilst of 1,887 born at the same time, but not similarly treated, 4.34 per cent. were affected; (*b*) by Prof. Olshausen, who, by washing the eyes with a one-per-cent. carbolic solution, reduced the percentage from 12.5 to 6 per cent.; (*c*) in the practice of Prof. Simpson, by the nitrate of silver treatment; (*d*) of 2,266 births in the practice of Dr. Abegg, who washed the eyes immediately after birth with pure water, only 3 per cent. were affected; (*e*) reduction in the frequency had also been obtained by Bischoff, who, by vaginal carbolic injections and washing of the eyes with salicylic lotion reduced the percentage from 5.6 to 2.6 per cent., and also by Créde, by vaginal injections (carbolic and salicylic acids). These results warranted an extensive series of investigations in order to determine to what extent the occurrence of ophthalmia neonatorum might be prevented, and what methods of treatment yield the best results. These points could be settled only by those in obstetric practice. Inquiries were needed regarding, first, the influence of cleansing and disinfecting of the genital passage of the mother previous to delivery. Was this a plan of treatment which might be adopted as a routine practice in every case of labor? Secondly, the influence of simple cleansing, and astringent treatment of the eyes immediately after birth. The entire treatment of the eyes should be in the hands of members of the members of the profession, and investigations should be made in the various lying-in hospitals of the country by the resident medical officers of those institutions.

A NEW REMEDY AGAINST DIPHTHERIA.

A remedy for the cure of diphtheria, concerning which a reputable physician states that he has used it for thirty years without ever losing a single patient of fully three hundred treated by him, is surely worthy of being tried by every practitioner, although on our part we can scarcely withhold some scepticism. The remedy is "wall-pepper," *sedum acre*, belonging to the family of the crassulaceæ and growing on old roofs, clay-walls, etc.; it is odorless, pungent,and astringent. The juice obtained from bruising fresh wall-pepper in a mortar is very sharp and even produces vomiting; applied to the skin it causes heat and painful erythema.

The plant has been used in times long past against scorbutic ulcers. Dr. Louis Duval, of Madrid, the author of the employment of this remedy in diphtheria (*El Siglo Medico*, Madrid, 7, xii, 84) makes a decoction of the juice of the wall-pepper with beer, and then evaporates the mixture in a closed vessel. The diphtheritic patients have to take from one to two litres of the decoction in hourly doses of a small glassful. The fourth dose produces copious vomiting, removing the diphtheritic membranes. No other liquid is allowed during the treatment; after complete elimination of all membranous peposit, stimulants are given. Pseudo-membranes in the nares are easily removed with several injections.

Reviewing the details of the therapeutic action of wall-pepper we arrive at the following conclusions:

1. The juice infiltrates the false membranes and destroys or loosens their connections with the mucous membrane; once loosened they are readily ejected by vomiting.

2. By cleansing or disinfecting the cleared mucous surfaces, the formation of new diphtheritic foci is prevented.

3. Similarly, the healthy mucous parts, *i. e.*,

those free of deposits, are protected from the formation of false membranes.

4. The tumefaction of the parts is soon reduced by the astringent properties of the drug.

5. The juice has superior emetic properties; the emesis is copious, and causes little pain or fatigue.

It seems remarkable that if the drug possesses all the alleged virtues to such a high degree it should have remained unknown so long to the profession. Further trials of it are evidently needed to confirm its claimed therapeutic value.

CONTINUOUS TRACTION IN THE TREATMENT OF POTT'S DISEASE.

In the *Medical Record* for Feb. 2d, 1885, Dr. John F. Ridlon reports a case which illustrates in the most striking manner the beneficial results of continuous traction in the treatment of Pott's disease. The case was that of a female patient, seven years of age, with a good hereditary history. Four months before, her neck began to grow stiff and her head to droop forward. There was no complaint of pain and no crying at night. The general health remained fairly good, but the above-described condition gradually increased until, at the time of the examination, the chin rested on the sternum and at times was steadied by the hands, while voluntary movement of the head was impossible. An attempted passive movement in any direction elicits an anxious look but no complaint of pain; and the head is found to be held absolutely rigid by muscular spasm. There is a sharp angular kyphos at the third cervical vertebra. No evidence of abscess. The patient was put in bed on July 19th, a Sayre's collar was applied, and from it a cord passing over a pulley at the head of the bed, which was elevated, and a ten-pound weight attached. It was soon found that the patient would slide up in bed till the straps from the collar struck the pulley and released the traction. A harness was then arranged of webbing around the waist and over the shoulders and passing to the foot of the bed, where it was fastened. The appetite was good and the sleep normal. From this time the case progressed favorably. The muscular spasm relaxed; the chin left the sternum and the kyphos diminished. By the end of six weeks, voluntary rotation and flexion were possible to a considerable degree when the patient was lying in bed.

By November 15th, four months from the beginning of treatment, the deformity was entirely reduced, and motion free in all directions when the head was supported. When support was removed, however, the head dropped forward, and the patient caught the chin in her hands and complained of the motion. A support was then applied, consisting of a modification of the H. C. Davis brace. The upright pieces of steel, instead of stopping opposite the lower borders of the axillæ, were carried up along each side of the spine, carefully moulded to the surface, and up over the posterior surface of the head to the occiput. From here a strap was carried around the forehead, and another downward to form a chin support. The chin support was removed at meal-times, and has recently been removed altogether. Up to the present time there has been no return of the deformity, and the possible voluntary motion has increased.

This case, therefore, with another somewhat less satisfactory one reported by Dr. Ridlon, seems to show that in certain cases as in hip-joint disease, traction, will relieve reflex muscular spasm and pain more quickly, and give a better result as to deformity, than will fixation alone.

VERATRINE IN MUSCULAR TREMOR.

Dr. Féris has employed veratrine in the tremors resulting from various affections, such as alcoholism, typhus fever, disseminated sclerosis, etc., with perfect success. The drug is usually given in pill form, four being given in a day, each containing $\frac{1}{128}$ grain; an appreciable modification of the tremor ensues promptly after having taken the fourth pill, as the patient can readily ascertain by attempts at writing before and after having taken the remedy. The treatment lasts from five to fourteen days, though to ensure a permanent cure the drug ought to be taken at least twelve days after the disappearance of the tremor.—*Jour. de Méd. de Paris.*

COCAINE IN DYSMENORRHŒA.

Cocaine, if all that we hear about it is true, will soon deserve the name of universal panacea, the last instance in which it has been claimed to overcome painful sensation being in the relief of dysmenorrhœa.

In the *Medical News* for Jan. 10th, 1885, Dr. John Forrest relates the case of a patient who had suffered for years from painful menstruation, accompanying a retroflexion of

the uterus, complicated with adhesions. The deformity of the uterus had been rectified by treatment, but the pain during the menstrual period was still as agonizing as ever. The most acute and intolerable anguish was felt in the left inguinal region, and was accompanied by a wind colic that caused the sufferer to writhe in agony. Nausea and vomiting added to her distress, and she seemed at times ready to go out of her mind with suffering.

While attempting to effect a permanent cure of this condition by appropriate treatment, temporary relief by the administration of morphine was all that could be afforded; at the same time, that drug produced such disagreeable effects, that the remedy was only not quite so bad as the disease. But on one occasion, instead of morphine, Dr. Forrest used cocaine, injecting subcutaneously over the left ovary at first three, increased afterwards to five, minims of a four-per-cent. solution. Almost immediately after each injection the pain in the inguinal region ceased to be felt, the nausea and wind colic were relieved, and, instead of nervous excitement and wakefulness, a soothing effect inclining to sleep was experienced. Five minims of a four-per-cent. solution were sufficient to afford complete relief for five or six hours, and comparative immunity for a much longer period.

While, however, the drug acted thus admirably, both locally and generally, it had no effect, apparently, on the bearing-down pains, and pain in the back, but only upon the local pain in the neighborhood of the spot where it was injected. It was also noticed, that, while it relieved the nausea and vomiting of reflex origin, it sometimes caused slight nausea itself, but this was only temporary. No other unpleasant effect was experienced, if we except a slightly bitter taste imparted to the tongue.

If cocaine can thus be made to supercede morphine in such cases, it will certainly prove an inestimable boon to many an unfortunate sufferer. And if it is able to relieve that excruciating intestinal pain usually called wind-colic, which in so many cases is sure to follow the slightest surgical interference with the uterus, this of itself will be no mean trophy added to its many wonderful triumphs over human suffering.

APOMORPHINE AS AN EMETIC.

Mr. Charles J. Devis (*Australasian Medical Gazette*, Dec. 15, 1884) believes that as an emetic, apomorphine surpasses in certainty, rapidity and effectiveness of action, any other drug with which he is acquainted. He has always found that it produces emesis in a few minutes where other emetics have failed, and in cases where swallowing, from one cause or another, has been impossible; or where the administration of drugs by the mouth has been combated by the patient, sub-cutaneous injection of apomorphine has proved invaluable. In the comatose stage of alcoholism, where no reaction to violent stimuli can be obtained, and again where violent delirium is present, when neither emetics can be given by the mouth nor the stomach-tube be used—in such cases, marked improvement is produced by apomorphine in emptying the stomach. Another class of cases in which this drug has also been found to be useful is that of pulmonary catarrhal conditions, especially in children, where the accumulating secretion in the bronchi produces a state of ever-increasing asphyxia. In such cases emetics are apt to be ineffective, while apomorphine acts quite readily, though the violent single effort at vomiting which is apt to follow the use of this drug is not as successful in clearing the air passages as would be repeated moderately violent attempts at vomiting. So also in cases of poisoning where emesis is necessary, and the use of apomorphine not contra-indicated, this drug, from its rapidity and complete action, is of the greatest value. He concludes by saying that after considerable experience in the administration of apomorphine as an emetic, he sees no contra-indication to its use in any case where rapid emesis is required, except perhaps where cardiac depression is already present to a considerable extent, and he believes that even then the drug might be used, provided the judicious administration of a stimulant be at the same time adopted, and the recumbent position strictly enjoined. He has always used a hypodermic solution prepared from the gelatin discs, at the time required; and the dose he has given has varied from one-sixtieth of a grain for infants to one-tenth of a grain for adults, and only on one occasion had he to give a second dose to procure vomiting.

A NEW PERMANENT ANTISEPTIC DRESSING.

At the Academie de Médecine M. Sée spoke on a new mode of dressing wounds which would be permanent. When a wound is going to be sutured he arrests the blood by catgut ligatures at first, and then dusts the

part with subnitrate of bismuth, finely powdered. When all oozing has ceased, he makes, if the wound is profound, deep sutures, and the drainage tube is made of red India-rubber. More powdered bismuth is applied and the whole covered with a phenicated pad, in the centre of which is slipped a sachet containing a certain quantity of corrosive sublimate. The tubes are withdrawn at the end of the third or fourth day, and the dressing removed in a fortnight or three weeks, when the cicatrix is fully formed.—*Medical Press*, January 21, 1885.

INFLUENCE OF VAPORS OF BI-SULPHIDE OF CARBON AND CHLORIDE OF SULPHUR ON THE VISION AND GENERAL HEALTH.

At the meeting of the Ophthalmological Society, held on January 8th, 1885, Mr. Adam Frost (*Lancet*, January 17, 1885), read the report of the committee on poisoning by bi-sulphide of carbon and chloride of sulphur, signed by himself, Mr. Gunn and Mr. Nettleship. The affection, they said, had long been recognized in France, and had been well described by Dr. A. Delpech, who grouped the symptoms into two stages, namely, a stage of excitement and a stage of depression. The affection has also been described in England by Dr. Alexander Bruce. It appeared that there were only a few firms engaged in the manufacture of India-rubber by Parkes' process, which was admittedly the one most liable to be followed by symptoms of ill-health. The reporters referred in some detail to the various steps of the process which appeared to involve the greatest amount of risk, and pointed out the methods by which they believed that in some degree these dangers might be obviated. Out of the thirty-three recorded cases, in twenty-four there was some affection of vision. The prognosis appeared to be tolerably favorable if the patient were able to give up his work at an early period after the first appearance of the symptoms. They were unable to draw any definite conclusions as to the length of time of exposure to the noxious influence necessary for the production of the symptoms; slight symptoms, however, were often noticed a few days after commencing the work. The amblyopia was never an isolated symptom, and never occurred without well-marked toxic symptoms. In most of the cases which were seen by oculists, decided changes were seen in the optic discs; in the earlier stages, haziness and other signs of chronic neuritis, in the later stages some degree of atrophy or pallor. In some, central defect of the field was found, but this had not been carefully examined, except in a very few instances. Several patients were noted as smokers, and a good many were stated to have been particularly temperate.

HYDROCHLORATE OF COCAINE IN THE TREATMENT OF NASAL AFFECTIONS.

While performing some experiments with hydrochlorate of cocaine in order to ascertain its value as a local anæsthetic for intra-nasal operations, Dr. Charles E. Sajous (*Medical News*, Dec. 20, 1884), noticed that when the mucous membrane covering the turbinated bones was distended, whether as the manifestation of either an acute or chronic inflammatory process, one application of a four-per-cent. solution was sufficient to cause in three minutes its absolute collapse. Not only did it return to its normal thickness, but when applied to the membrane in which hypertrophic changes had not taken place, the contraction was so great that the conformation of the bony structure beneath could be plainly discerned. This state of collapse continued for about half an hour, when the membrane returned to its distended condition It was evident, therefore, that in this remedy we have a means of more effectively inducing absorption in catarrh of the nasal cavities which is much more effective than the use of astringents, pressure by means of bougies, cotton wads, etc. In acute catarrh, or cold in the head, we have a condition of engorgement of the blood vessels in the nasal mucous membrane, and the secretion which, at first is thin and watery through hyperstimulation of the glands, soon becomes more and more charged with broken-down epithelial cells, lymph corpuscles, pus globules, etc., until it assumes the character of thick, tenacious mucus, or muco-pus. It would appear that if cocaine, having the effects which Dr. Sajous describes, was applied early to the membrane in a case of acute coryza, its constringing influence on the membrane must diminish the blood supply, and thus prevent engorgement and transudation.

Dr. Sajous further states that he has tested its abortive action in an attack of coryza occurring in himself. As soon as the initial stage had passed over and free secretion commenced, he applied the four-per-cent. solution freely over the inferior turbinated bones on each side. A sensation of slight heat immediately followed, soon replaced by a feeling

of relief and the disappearance of all irritability. At the end of three minutes the stuffiness had completely disappeared, and did not reappear until three-quarters of an hour later. A renewal of the application was followed by the same results, while after the third, the distension and consequent obstruction did not recur. If it turns out that in this drug we have a remedy which will cure cold in the head, our praise for it cannot be too enthusiastic. Further experiments are of course needed before this can be established.

Dr. Sajous further says that in chronic nasal catarrh a constringing action of the drug is especially manifest, and he states that he has employed it in seven cases with the most happy results. As an anæsthetic for nasal operations, the author states that so far his experiments have not realized his anticipations. Of the fourteen cases in which it was used during the performance of an operation, in only two was there any marked effect. In his experiments he used a two-per-cent., four-per-cent., and finally, a ten-per-cent. solution, but could notice no difference in the action of the two latter. That the preparations were not defective was proved by the fact that the same solutions were used in operations on the eye, and were found to possess considerable anæsthetic properties.

THE USE OF HYOSCYAMINE IN DELIRIUM TREMENS.

At a meeting of the Cambridge Medical Society, held Jan. 2d, 1885, Mr. Hyde Hills read notes of a case in which he had used this drug (*British Medical Journal*, Feb. 7th, 1885), He was called up one morning to see a fine, healthy looking man, thirty-four years old, who had been drinking a bottle of brandy a day for ten days, but had taken none for the last twenty-four hours. He had not slept for three nights, and was now delirious, with the usual symptoms. He administered one-fourth of a grain of hyoscyamine in a little brandy and water at 4:30 a. m.; and at 7:30, as he was still restless and noisy, with dilated pupils, a second dose of one-sixth of a grain was given. At 1:30 p. m., as he did not sleep, one-third of a grain was repeated, after which he remained quiet for about two hours. At 6:30 p. m., though still showing the effects of the drug in dilated pupils and dry tongue, he was given five-twelfths of a grain. He had a restless, noisy night, and was worse than ever. His pulse was 120, he complained of thirst, and had taken no nourishment for thirty-six hours. At 5:45 a. m., or twenty-five hours after the first dose, he was given seven-twelfths of a grain; he was soon quieter, and in two hours was asleep. In the morning he was quite right, and soon recovered. The same drug was used in five other cases of delirium tremens. In three cases, a quarter of a grain given at bedtime produced sleep, and was not again required. In two, a quarter of a grain was given ineffectually, but one-third of a grain in the morning had the desired effect; and all recovered.

In a case of mania, a third of a grain produced rather alarming symptoms.

Mr. Hills had not seen any reports of cases of delirium treated with this drug. His practice would be to give a fourth of a grain first, and, if necessary, give increasingly larger doses every six hours. He was in the habit of giving it in some alcoholic beverage. Merck's solution of the amorphous hyoscyamine was the preparation used.

Mr. Carver stated that he also had used the drug in two cases. In one case of delirium tremens, after bromide of potassium and chloral had failed, small, repeated doses of hyoscyamine quieted the patient within twelve hours. In a bad case of acute mania in a young lady, doses of a half and three-eighths of a grain produced sleep and recovery in a very satisfactory manner. The late Dr. Bacon had advocated its use in mania, and employed it with great success in Fulbourn Asylum.

ETHER-SPRAY ON THE VERTEBRAL COLUMN.

The local application of the ether-spray to the spinal column, so warmly recommended some time ago by Lubelski and Jaccoud, seems actually an effective remedy in the diseases mentioned. Bonteillier reports in *Le Progrès Médieale*, 40, 48, a case of traumatic tetanus which was perfectly cured by the ether-spray, applied at first every two hours, then every five hours to the vertebral column. In a case of chorea, where the application was made every morning and night and lasted from three to five minutes, another perfect cure was obtained within a month. It need not be added that all other known remedies were previously tried in vain.

THE PHYSIOLOGICAL ACTION OF COCAINE.

In the *Journal of the American Medical Association* for Jan. 17, 1885, Dr. Hermann M. Biggs describes some careful experiments

which he made on cold-blooded animals in the physiological laboratory at Berlin with Merck's hydro-chlorate of cocaine. These conclusions are summed up as follows:

1. It has a powerful local anæsthetic action on the skin, mucous membrane and the eye. It usually produces mydriasis.

2. It has a depressant action on the heart, reduces the force and frequency of its pulsations and finally paralyzes it (first the ventricle and then the auricles in diastole).

3. In small doses it at first slightly increases the number of the respirations, then decreases them, and in large doses diminishes them rapidly from the first, finally causing death from a paralysis of respiration.

4. It at first slightly heightens, and then greatly depresses the reflex action of the spinal cord in small doses. Large doses depress from the first.

5. Small doses at first slightly increase the irritability of the sensory nerves, then depress their irritability, and large doses depress from the first.

6. Both large and small (not very small) doses have a depressant action on the motor nerves.

7. It paralyzes the pneumogastric nerves.

8. Doses of moderate size diminish the excitability of the striated muscles.

9. The local application of cocaine to any of the more highly constituted organs and tissues causes a temporary cessation of their functional activity.

10. From the local and constitutional action on the different organs and tissues, it is rendered probable that its general action is wholly a local one, exercised on all parts for which it has a chemical affinity, through its presence on the blood.

The results of these experiments would seem to indicate the use of cocaine in tetanus and strychnine poisoning.

The writer hopes to be able to report in a short time the results of similar experiments on the warm-blooded animals, with experiments on the antidotal action of strychnine and cocaine.

PHENOL-CAMPHOR.

Dr. Theodore Schæffer (*Peoria Medical Monthly*, Jan., 1885), noticed in 1882 the important fact that when common or Japan camphor and crystallized carbolic acid are mixed together and subjected to heat, a colorless liquid is the result. This reaction seems to have attracted but little attention, though Dr. Squibb alludes to it in the *Ephemeris* under the appellation of compound alum powder.

Phenol-camphor is best obtained by heating crystallized carbolic acid (phenol) until it fuses, and then gradually adding camphor; a clear liquid is obtained which is characteristic on account of its permanency. In preparing this substance, the writer uses equal parts of camphor and carbolic acid. It remains liquid for an indefinite time, and does not solidify on being subjected to the low temperature of a frigorific mixture of snow and sodium chloride. Phenol-camphor [C_8 H_{11} O (?)] is a colorless, refractive liquid, possessing the fragrant odor of camphor, entirely extinguishing the one of carbolic acid, and has a sweetish camphoraceous, but biting taste, not as caustic as that of carbolic acid, somewhat benumbing the tongue. It is soluble in alcohol, ether, chloroform and ethereal oils, but is insoluble in glycerin and water, being heavier than the latter. When ignited it burns with a smoky flame. There is reason to believe that this is a chemical compound. Dr. Schæffer has used phenol-camphor as a local anæsthetic in tooth-ache, introducing it on cotton into the cavity of a carious tooth, with good success; and can speak of it favorably as a local anæsthetic in the ingrowing of the toe-nails. He has used it also in combination in certain eruptions due to cryptogamic causes. This substance can be likewise used as antiseptic. It mixes well with paraffin, cosmoline, and a number of oils. In impregnating cotton gauze (antiseptic gauze), phenol-camphor may be used as a substitute for carbolic acid. Phenol-camphor is less irritating, less caustic than carbolic acid, and has also the advantage of possessing a pleasant odor.

HAMAMELIS VIRGINICA IN HÆMORRHAGE FROM THE BOWELS.

Mr. Richard Halpin reports in the *British Medical Journal* for Jan. 31st, 1885, the following case, which illustrates the value of hamamelis Virginica in the treatment of hæmorrhage. The case was that of a cabinet-maker, aged forty-four, who had been subject for eight years to bleeding from the rectum. In 1877 he suffered from an attack of pleurisy of the right side, and, during convalescence, noticed that he was passing blood in his motions in considerable quantities. The hæmorrhage was periodic, coming on in alternate months, lasting four weeks at a time. The blood was passed in the morning, immediately after the bowels had been relieved. It was

bright red in color, usually fluid, but sometimes coagulated, and amounted to about two ounces. The patient's general health suffering considerably, he was reduced to a condition of great debility, and was forced to seek advice at St. Bartholomew's Hospital. He was found, on examination, to be free from piles, fistulæ, etc., and was treated, with little or no benefit, as an out-patient. In November he was admitted as an in-patient at the Royal Hospital for Thoracic Diseases, and was found to have taken almost every drug in the pharmacopœia. But the hæmorrhage still continued. Knowing the value of hamamelis in these cases, it occurred to Mr. Halpin that the aqueous distillate of the fresh bark, known as hazeline, might be of use, and he accordingly injected an ounce, diluted with a small quantity of water, into the patient's rectum, giving at the same time half a drachm by the mouth every three hours. The bleeding was at once arrested, and, although the patient remained for some weeks under observation, there was no return of his old trouble.

This case, even though an accurate diagnosis is lacking, we venture to think, affords conclusive proof that we have, in hamamelis Virginica, a drug which may be relied on for the treatment of a very obstinate class of cases. Mr. Halpin also mentions the fact that equally good results have in his hands attended its use in cases of pulmonary hæmorrhage.

HYDROCHLORATE OF HYDRASTINE.

The well-known application of the preparations of hydrastis canadensis as therapeutic agents for the various affections of mucous surfaces, induced Dr. Robert Sattler, several years ago, to test their efficacy in the management of catarrhal affections of the nose and pharynx, and although the results that he obtained were tolerably satisfactory, he was led to abandon their use, principally on account of the staining of towels and handkerchiefs which followed their local application. Since, however, berberine and hydrastine, the alkaloids of hydrastis canadensis, have been isolated, and Dr. Sattler again commenced the use of these drugs under similar conditions, and he details the results in the *Medical News* for Jan. 31, 1885. Berberine in solution was found to be of little advantage, and was uniformly attended by so many disadvantages when used in the form of collyria, owing to the marked staining of the adjoining skin, and the immediate precipitation or chemical transformation of the mucous secretions, that it was abandoned. The hydrochlorate of hydrastine, however, a white, colorless, readily soluble salt, yielded far more satisfactory results, and a two- or three-grain solution of this salt dropped into the conjunctival sac of the eye produces immediate local evidences of irritation and stimulation which involves, to a greater or less degree, the entire conjunctiva. Its use is attended with a slight burning or stinging sensation which seldom exceeds a minute's duration. Stronger solutions cause a more marked local reaction, more marked discomfort, intensified reflex symptoms, and a great flow of watery mucus. The agent seems to exert its influence exclusively upon the conjunctiva. The use of this drug may be resorted to in various affections of the conjunctiva, where a temporary hyperæmia is indicated, to aid the absorption of infiltrated cellular or other inflammatory elements, such as follicular and granular conjunctivitis or chronic catarrhal conjunctivitis. Weak solutions may be instilled into the eye three or four times a day, with almost uniformly favorable results, and with less discomfort than usually follows the use of mineral or vegetable stimulants of the same strength.

THE TREATMENT OF ŒSOPHAGEAL CANCER.

At the Clinical Society of London, Mr. Symonds, of Guy's Hospital, described a method of treating cancerous stricture of the œsophagus by means of permanently retained tubes (*Medical Press*, January 28th, 1875). The case detailed was that of a man for whose relief gastrotomy appeared to offer the only feasible resort, but before proceeding to make the opening, Mr. Symonds resolved to try whether a short tube could not be so arranged and introduced through the stricture as to admit of fluids being swallowed through it. The patient had been much distressed, also, by his inability to swallow saliva, and his rest had consequently been greatly disturbed. The instrument devised by Mr. Symonds consisted of the terminal six inches of a rubber catheter, to the upper end of which a slightly dilated funnel was attached, and to this latter a silk thread. The whole apparatus was passed carefully back to the pharynx and œsophagus, and well through the stricture, the lower open end either passing into the stomach or nearly so. The free end of the silk thread was fastened securely round one ear of the patient, and the tube

removed, when required, by its means. At first, tubes of ivory, hard wood and silver were tried, but it was found that rubber stood as well, and was as safe and comfortable as any other material, the man at the present time having in one of this description, which was inserted ten weeks since. It is of the calibre of No. 10 catheter, and permits of thick fluid being swallowed with ease and comfort, while the taste is also enjoyed. This plan is an unquestioned improvement on the usual one of feeding by a stomach tube, and its extension seems to offer many prospects of high benefit. Future experience alone can prove how far the application of this method must be confined to cases in which the stricture is below the level of the cricoid cartilage. Mr. Symonds is himself sanguine that it may be found of service for even those of a post-laryngeal character.

TANNIC ACID INJECTIONS IN CHOLERA.

We have already alluded once or twice to the successful results obtained by Prof. Cantani, of Naples, in the treatment of the premonitory diarrhœa of cholera with warm tannic acid injections. Dr. Vincenzo Vitone has just published in *Il Morgagni* his results for that method of treatment at the Cholera Orphanage at S. Antonio a Tarsia, and his results have been published in the *Lancet* for Feb. 21, 1885, from which we take the following account:

The children admitted to this institution came from the most infected parts of the city, and had lost one or both parents from cholera. Three illustrative cases may be quoted from a large number in which cholera was promptly arrested by tannic acid clysters:

S. B., aged eight, was conveyed to the Orphanage on Sept. 18, from the house in which both his parents had died from cholera. He had enjoyed perfect health up to the time when, from no appreciable cause, he was seized with vomiting and diarrhœa. In a few hours he had ten evacuations, the last perfectly colorless. The patient complained of intense thirst and pain over the region of the stomach; the face was slightly cyanotic; temperature, 36° C.; pulse scarcely perceptible. The following solution was injected per rectum: Warm water, 1,000 grammes (1 gramme is equal to 15.462 grains); tannic acid, 3 grammes; gum arabic, 20 grammes; and laudanum, 12 drops. An infusion of chamomile was administered at the same time. After the lapse of an hour the boy was more wakeful, and the pulse became perceptible; the alvine discharges ceased, and in two days the patient left his bed completely cured.

P. T., aged four years, had lost her mother from cholera, and was conveyed to the orphanage on October 10th. She was rapidly reduced by rice-colored stools, so as to be scarcely recognizable. At 3 P. M. the temperature was 36.1° C., and the pulse almost imperceptible. The following clyster was administered: Warm water, 400 grammes; tannic acid, two grammes; gum arabic, fifteen grammes; laudanum, five drops. The diarrhœa was suddenly arrested. At midnight the child was wakeful, hungry, and partook of milk. In two days she left her bed perfectly fectly cured.

A. R., aged three, lost his mother from cholera and was suddenly seized with vomiting and diarrhœa. The face became cyanotic, and the extremities cold. The temperature of the body was 35.1° C., the pulse scarcely perceptible. A warm tannic acid clyster, according to the formula in the preceding case, was administered at once, an infusion of chamomile was given by the mouth, and the limbs were wrapped in warm woollen cloths. In the course of two hours the diarrhœa had ceased, and marked reaction set in; the temperature was 38.8° C., and the pulse 80. The following day the fever continued and the bowels acted, but the motion was well formed. The fever continued two days longer, but then subsided, leaving the child perfectly well. In adults Dr. E. Villani has injected per rectum as much as fifteen grammes of tannic acid in two litres of warm water, with invariably good result. The *modus operandi* of the treatment is attributed by Prof. Cantani to the astringent power of tannic acid, and to its sterilizing the comma bacilli, which need an alkaline solution for their development. Without entering into this therapeutical disquisition, the clinical results appear to afford striking evidence of the efficacy of warm tannic acid clysters in the treatment of cholera.

CINCHONIDINE AND PICROTOXINE.

The following conclusions have been arrived at by Dr. Chirone, as the result of a careful series of experiments on animals with bisulphate of cinchonidine and with picrotoxine:

1. There are poisons like cinchonidine and picrotoxine, which are capable of causing genuine epileptic attacks. Cinchonidine acts chiefly by irritating the cortical motor centres,

and picrotoxine acts on the centres in the medulla oblongata.

2. Cinchonidine does not cause convulsions in animals from which the brain has been removed; when certain of the motor centres have been taken away, the convulsions do not occur in those groups of muscles innervated by the removed centres. Picrotoxine, however, has a toxic action of a more energetic kind on the same animals.

3. The convulsions called forth by these poisons, although of an epileptiform nature, nevertheless, present notable differences, even in the same animals; animals are affected according to the degree of development of their nervous system, and according to special circumstances of their existence. All vertebrated animals are affected, even the amphioxus. The invertebrated animals present no phenomena when treated by these agents.

4. Cinchonidine, whilst killing rabbitts, does not always cause epileptic phenomena; these animals, however, do react to picrotoxine.

5. Cinchonidine does not, though picrotoxine does, cause convulsive phenomena in hibernating animals, at all events during summer.

6. In the higher mammals the convulsions of cerebral origin, induced by cinchonidine, always commence in the muscles of the face, and extend gradually to those of the neck, front limbs, etc. The convulsions due to picrotoxine generally commence with tremors of the head, or of the entire body. The spasms from cinchonidine at the onset are clonic, whilst those of picrotoxine are at the onset tonic. The ocular muscles and those of the pupil and tongue, take but little part in the phenomena induced by cinchonidine, whilst the reverse holds good for picrotoxine. Picrotoxine causes a cadaveric rigidity, which is seen before, and persists a long time after death; whilst cinchonidine does not disturb the usual phenomena of post-mortem rigidity. —*Lancet*, February 21, 1885.

A NEW METHOD OF TREATING ACUTE INTESTINAL OBSTRUCTION.

There has recently been advocated and successfully practiced a method of affording relief in cases of intestinal obstruction which may become widely applied. Dr. Kussmaul was the first to advance the view that free washing out of the stomach might prove efficacious, and already cases of marked success following the measure have been published. In one case, after eight days complete obstruction, and in the other, after nine days, the symptom of fæcal vomiting being present in each, the washing out of the stomach, and consequent evacuation of large quantities of fluid fæcal matter from the upper part of the small intestine, resulted in complete relief from symptoms. The measure may be compared to the effect produced by laparotomy above the site of an obstruction; and the good result is explained on the ground that evacuation of the distended bowel affords an opportunity for a spontaneous reduction of a herniated or twisted loop. The relief from the inordinate abdominal distension is very great, and, moreover, the evacuation favors palpation for the purpose of diagnosis. Obviously not every case of acute intestinal obstruction could possibly be relieved by this method, but the simplicity of the practice, the certainty of affording temporary relief, and the possibility of a cure, are reasons for its sedulous adoption prior to proceeding to more serious measures.—*Lancet*, Feb. 14, 1885.

CHOREA TREATED WITH CONTINUOUS INHALATION OF CHLOROFORM.

At a recent meeting of the Liverpool Medical Institution, Dr. Bostock read the history of a case of chorea treated with continuous inhalation of chloroform, which resulted in recovery (*Medical Press*, Jan. 7, 1885).

The case was that of a little, slightly-built girl, in whom the affection was developed in most marked form. The patient was in the Royal Infirmary, under Dr. Davidson. Scarcely any food could be given, or sleep obtained. The skin over the elbows and buttocks was broken, through constant movement. All ordinary remedies were tried, such as conium, chloral and the bromides in increasing doses, Calabar bean, and nux vomica, but with but little benefit. She had to be restrained in bed. Chloroform was now given. This easily put her into a sleep that lasted two hours, and, before complete consciousness was obtained, food was given. This plan was kept up for about eight days, when the chloroform was given continuously for thirty hours. She now became a little better. The limbs were wrapped in wadding, and the patient strapped down onto the bed. After this but little chloroform was required. She had passed the worst, and recovery took place.

OXIDE OF ZINC IN THE TREATMENT OF WOUNDS.

Dr. Emil Steiger (*N. Y. Medical Record*, March 21, 1885) states that Prof. Socin, Surgeon-in-chief of the Hospital in Basle, is a strong advocate of the use of oxide of zinc in the treatment of wounds, believing that it is in no way inferior to iodoform or bismuth as an antiseptic.

At the same time oxide of zinc possesses merits which should be fully appreciated, in the fact that it is absolutely harmless, positively odorless, and very cheap.

Already at the convention of the Aerztlicher Centralverein in Basel (May, 1883), he was enabled to report some surprisingly beautiful results which he had obtained from the oxide of zinc. Soon thereafter he read (*Deutsche Medizinische Wochenschrift*, No. 25, June, 1883) that Professor Petersen, of Kiel, had very successfully used the same remedy. But as the manner in which he makes use of the oxide of zinc differs in various points from that of Professor Petersen, it will not come amiss to describe his method. The prominent and guiding idea is that no other antiseptic shall come in direct contact with the wound. Carbolic acid solutions, therefore, serve only for disinfection of the operating room, the washing of hands and instruments, and the general field of operation. Sponges, after being used, are thoroughly cleansed in water, then for four weeks (the time of their being used again) soaked in a five-per-cent. solution of carbolic acid, and directly before using them again, well rinsed in clear water and immersed in "thin zinc-milk," of which more anon.

Dr. Socin uses the oxide of zinc in four different forms:

1. A mixture of one part of ZnO, to one hundred parts of distilled water (thin zinc-milk) is used for irrigating all fresh wounds, for moistening the sponges which come in contact with the wound surface, and for syringing out opened cavities of the tissues and joints, etc.

2. With a mixture of ten parts of zinc to one hundred parts of aq. dest. (thick zinc-milk) he irrigates all wounds intended to be kept open, before their being dressed, long enough to secure a white covering or lining of the whole surface.

3. As dry powder the oxide of zinc is applied with a powder-box to ulcers, burns, abrasions of the skin, etc., and possesses in such cases great merits.

4. To cover sutured wounds the so-called zinc-paste, consisting of fifty parts of zinc-oxide, fifty parts of water, and five-sixths part of chloride of zinc is used. This paste exposed to the air dries quickly up to form a hard crust, as both substances are chemically united into an oxychloride of zinc, such as is often used in dentistry. Supported by a thin layer of cotton this paste forms a hermetically closing and sufficiently adhesive cover of the wound.

The cicatrices formed under this zinc cover are generally more beautiful and finer than those obtained from any other kind of wound-dressing.

For the treatment of wounds already septic the oxide of zinc is no more efficient than any other antiseptics which are insoluble in water.

This testimony induced Dr. Steiger also to use the oxide of zinc in all suitable cases, and the results justified his expectations.

THE NEW TREATMENT FOR GONORRHŒA.

Some few months ago there appeared in one of our medical journals an article on the "Treatment of Gonorrhœa," and, as the treatment partly consisted in the use of a very reliable antiseptic and germicide, namely, bichloride of mercury, it struck many at once as being a sensible remedy, even if not a practical one, which, of course, could only be ascertained by experience.

Those who were naturally most taken with the idea were the specialists in this line, and Dr. E. Blackwell was led to make trial of the same through the influence of one of these specialists (*N. Y. Med. Record*, March 7, 1885).

The process consists, first, in running through the urethra, from a fountain syringe, two or three quarts of warm water. The catheter is passed back beyond the inflammation in the urethra, and then the water is turned on and allowed to run through the catheter, and so on out again by the side of the catheter, not entering the bladder. The water first is made comfortably warm, and gradually made warmer until the patient complains of it being too warm; thus of a gradually warmer degree about three quarts are allowed to run through. Then, immediately after, a solution of $\frac{1}{1000}$ to $\frac{1}{2000}$ of the bichloride is passed through in the same manner. After three or four such injections, the germs are supposed to be killed, and the patient promptly recovers.

Dr. Blackwell has tested it on four cases, in two of which the treatment was successful, and in two not.

The first case that presented itself, and upon whom it worked successfully, was one whose discharge appeared about thirty-six hours after intercourse. This short period of incubation led him to think it was urethritis, and he still thinks it was. After the first injection, the discharge was at no time more than a moistening of the lips of the urethra, and after the fourth injection he dismissed him well.

The second case was where the discharge came on about four days after exposure, and which had been discharging for twenty-four hours before he was seen. This treatment was commenced at once, and was kept up until five injections had been given him in five consecutive days, after which the discharge began again, and he put him on the old-established treatment. During the time of giving the injections the discharge was very little.

The third case was one again where the discharge came on about forty-eight hours after exposure, and he came to the doctor immediately. After using three injections, as described above, the discharge ceased and did not return.

The fourth case was one where no discharge appeared until the eighth day after exposure. Being anxious to make a more extensive and thorough trial of the treatment, Dr. Blackwell gave this man nine injections, as he was positive it was gonorrhœa. After he had taken the nine injections, ranging from a $\frac{1}{500}$ to a $\frac{1}{2000}$ solution, he came back on the second day following the last injection with a discharge as bad as in the beginning, and he was compelled again to resort to another kind of treatment.

In the above cases there was every indication that the two instances where the new remedy worked well were simply cases of urethritis, and the two cases where it failed were without doubt, in his mind, true gonorrhea. Hence from these small data he came to the conclusion that it had no merits in the treatment of true gonorrhœa, or, at least, would not effect a cure within the limits prescribed for it.

MENYANTHES TRIFOLIATA.

This herb has recently been recommended by Drs. Pollock and E. White in the treatment of functional amenorrhœa. The plant is widely distributed in the northern hemisphere, growing in spongy bogs, and flowering in May. The leaves arise from a creeping root-stock, and unlike those of most plants of the natural order gentianaceæ, to which it belongs, are alternate. They are trifoliate, and borne on a petiole four to six inches long, the leaflets being oblong or obovate, obtuse and smooth, and of a pale green color; the margin is somewhat slightly crenated. The taste is very bitter. The plant contains a glucoside, *menyanthin*, which is freely soluble in warm water and alcohol, but insoluble in ether. When warmed with dilute sulphuric acid it is resolved into menyanthol and glucose, the former body possessing a penetrating odor. Menyanthin is precipitated by tannin, but not by acetate of lead.

Dr. E. White states (*Lancet*, January 31, p. 235) that he has used menyanthes for the last eighteen months, and has always been satisfied with the results obtained. He first tried it in a case of functional amenorrhœa that would not yield to the usual remedies. As long ago as 1613, menyanthes was mentioned, under the name of trifolium aquaticum by a Swedish writer, Johannes Franckenius, who stated that a decoction of the herb removes all visceral obstructions, acts as an emmenagogue and diuretic, kills intestinal worms, and is a most efficacious remedy in scrofula. For a dose, a teaspoonful of the dried herb was boiled in wine or taken in the form of infusion or conserve. Like other bitters, menyanthes acts as an emetic if taken in large doses. Besides its use in amenorrhœa, menyanthes is of considerable value in the treatment of atonic dyspepsia, and those digestive and hepatic derangements which are apt to prevail in damp, malarious climates. It is also a popular remedy in chronic cutaneous eruptions, both internally and externally.

The decoction is made from one-half oz. of the herb in a pint of water, and the dose is a wineglassful three times a day. In Germany an elixir is made by dissolving two parts of the solid extract of menyanthes and two parts of extract of bitter orange peel in sixteen ounces each of peppermint-water and alcohol (sp. gr. 892), and adding one part of spirit of ether.—*Midland Medical Miscellany*, March 2, 1885.

THE CURE OF WRITER'S CRAMP.

Dr. de Watteville has recently published a remarkable account of a new cure of this obstinate disease, which will be good news to the large number of literary men and

women, clerks, musicians, etc., who are afflicted with it. He declares that writer's cramp, or scrivener's palsy, has hitherto defied the most strenuous efforts of therapeutics. The pharmacopœia has been ransacked in the search for a suitable drug wherewith to combat the symptoms, but in vain. Variously shaped pens and supports for the hand and arm, electrical and hydropathic applications, and even protracted rest have generally proved useless in severe cases. At last, however, a system, which is described as a peculiar combination of massage and gymnastics, has been brought into operation with very remarkable success by a German, Herr Julius Wolff. This gentleman, having gained a considerable reputation in his own country, was in 1881 called to Paris by Prof. Charcot, and in two or three weeks had cured inveterate cases of writer's cramp. These cures, with others previously effected in Germany, made a considerable impression on the medical world, and when a few months ago Herr Wolff came to settle in London, his arrival was regarded with interest by many of the principal English physicians. Dr. de Watteville gives minute particulars of some of the cases in which the new treatment has succeeded in enabling sufferers from this most distressing affection to write clearly and without pain, thus confirming the observations made by the eminent Professors Billroth, in Vienna, Nussbaum in Munich, and others. The massage consists of rubbing, kneading, stretching, and beating of the fingers and the several muscles of the hand and arm. There are gymnastic exercises, both active and passive; and, most important of all, there are graduated exercises in writing, with a view of calling into play a new set of muscles in lieu of those injured by the cramp. The writer concludes by mentioning the case of a gentleman sent by him to Herr Wolff. Here the disease was of seventeen years' duration, and yet in less than a fortnight the patient was able to write for several hours a day, with almost normal rapidity and firmness.—*Midland Med. Mis.*, March 2, 1885.

THE TREATMENT OF RINGWORM OF THE SCALP.

The following is a simple and very effectual method of treating ringworm of the scalp, described by Dr. James Faulis (*British Medical Journal*, March 14, 1885):

The child affected is made to sit down on a chair before a washing-basin half filled with warm water; a folded towel is first of all tied round the child's forehead, in such a way that no fluid poured on the head can trickle down into the eyes.

It is best to cut the hair short all round the affected part. If there be many spots of ringworm, the whole head may be closely cropped. Have ready a two ounce bottle of common spirit of turpentine, an ounce bottle of tincture of iodine, a camel-hair brush, and a ten per cent. cake of carbolic acid soap.

When the child bends foward over the basin, the spirit of turpentine is freely poured over one or more spots at a time, the forefinger being used to rub the turpentine well into the scalp. Almost immediately the dirt and greasy scabs disappear, and the short broken hairs are seen to stand up like bristles. Generally, in about three minutes' time, the child cries out, "Oh, it nips!" then we know that the turpentine has penetrated deeply. Immediately, the piece of carbolic acid soap is well rubbed into the parts which have been acted on by the turpentine, and warm water is freely applied to make this soap into a lather, by which means the head is well washed, and soon appears to be beautifully cleaned. The smarting, such as it is, quickly disappears after the application of the soap. The head is then well dried with a towel. Common tincture of iodine, in two or three coats, is now painted well over the affected parts, and allowed to dry. As soon as the the hair is dry, some carbolic oil (1 in 20) is rubbed all through the hair to catch such spores as may be there.

This treatment, applied every morning, or morning and night in very bad cases, generally cures the worst cases in the course of a week. During the last five years, I have used no other method of treatment. The explanation of its success is as follows: Common spirit of turpentine is a powerful germicide; but it is a still more powerful solvent of the sebaceous or greasy matter of the scalp, and it rapidly penetrates into the epithelial structures of the scalp, the affected hairs included, and clears the way for the application of a still more powerful germicide, namely, tincture of iodine.

It is an interesting chemical fact that spirit of turpentine, or, more correctly, oil of turpentine, is a powerful solvent of iodine. This solution of iodine in turpentine is a most powerful germicide, and quickly destroys the fungus of ringworm. If tincture of iodine be applied to the spots which have been treated, as above, first with the spirit of turpentine,

and then washed with carbolic acid soap and water, it finds its way down into the epithelial tissues, and into the hair-follicles, following the course which the spirit of turpentine has taken. It is of no use to apply watery solutions of germicides, until the greasy or sebaceous matters of the scalp has been first removed.

In some severe cases, I have applied a solution of iodine in turpentine, ten grains to the ounce, instead of the tincture of iodine, after the head has been washed and cleaned; but in most cases, the application of tincture of iodine. after the part has been acted on by the spirit of turpentine as above described, is quite sufficient to destroy the disease.

Ringworm on other parts of the body may be treated with spirit of turpentine and tincture of iodine in exactly the same way. One great advantage of this treatment is that it may be applied to the head of the youngest child, and cause little or no distress at any time.

THE VALUE OF QUININE, AND SOME OF ITS CONGENERS IN PARTURITION.

From a paper with the above title, Dr. Andrew Mullan draws the following conclusions:

1. Quinine, or quinetum, in doses from four grains and upwards, in powder, will start labor pains afresh in twenty or thirty minutes. Repeated at intervals of half an hour or an hour, it will maintain them strongly.

2. It produces no headache—hardly ever a trace of the cinchonism caused by similar doses under other circumstances—nor sickness, the bitter taste being the only disagreeable circumstance connected with it.

3. The pains it produces are not continuous, like those of ergot, but intermittent, like those produced by normal labor, and evidently not the result of a special stimulus exerted over the uterus only, but of a tonic effect exerted over the whole economy. The patient often feels stronger.

4. The action produced, when ergot is given alone, in cases where the patient has been exhausted, seems often to be spent in the delivery of the child, leaving the uterus in a state of exhaustion, unable to contract upon and expel the placenta, allowing hæmorrhage, and necessitating extraction. Such is not the case when quinine is properly used, either alone, or before the ergot.

5. It can be used where ergot is absolutely contraindicated with perfect safety, both to mother and child. In one case, five or six hours intervened between the giving of the first dose and the onset of pains, and the delivery of the child, yet all was right. Except in one case, Dr. Mullan says that he does not remember a child being born alive, when more than two hours elapsed between the administration of ergot and delivery.—*British Medical Journal*, Feb. 28, 1885.

TREATMENT OF SORE THROAT OF SCARLET FEVER.

Dr. W. H. Line (*Birmingham Med. Review*, March, 1885), in a valuable article on this subject, states that he found it advantageous to steam all cases of angina from the first, should the patient not be afraid of the apparatus, which may be either a Maw's inhaler or Lee's steam-draft. If the patient is too young to gargle—and about seventy-five per cent. of scarlet fever patients come under this category—and if the steam-atomizer and ordinary ball throat-spray are unavailable, much good can be done by the systematic injection of the nostrils. He orders the nostrils of every child suffering from scarlatina anginosa to be syringed out every three hours—a solution of chlorate of potash, salicylate of soda, boro-glyceride, or strong solution of common salt, being employed. The child will spit out what fluid may reach the throat, and so doing will clean the tonsils fairly well. The internal use of the tincture of Virginia stonecrop (tinctura Duboisiæ), recommended as a specific in pharyngitis, does not seem to exert much action, so far as his experience reaches, but it has the advantage of being a pleasant remedy, whether taken internally or used with the steam-atomizer.

A strong suspension of tartrate of chinoline in glycerin is useful where the tonsils are much enlarged and the throat relaxed, but the taste is exceedingly nauseous, and it does not recommend itself to children. Boroglyceride, with or without dilution, produces the most favorable results of any antiseptic he is acquainted with, and its application is submitted to by very young children. Solution of chlorine in water is very useful if there is much fœtor, but children object to it strongly as a nasal injection.

NAPHTHALIN IN CYSTITIS.

Naphthalin, one of the solid products of petroleum, insoluble in water, has been recommended for internal administration by Ross-

BACH in cases of cystitis with ammonical urine. Dr. Cushing lately spoke of its value at a meeting of the Suffolk Medical Society (U. S.), citing a case where he had given powders containing about two grains of the drug in wafers or capsules, mixed with water or flax-seed tea. Before the treatment was commenced, the bladder had been washed out daily with carbolic solutions, and on the second day of the naphthalin treatment all foul odor had disappeared. Subsequently, local treatment with boracic acid injections was combined with naphthalin internally. Naphthalin appears to have a most powerful antiseptic action, and Rossbach was led to its employment in cystitis by noting that it arrested fermentation of urine. The formula recommeded by Rossbach is:

℞ Naphthalini puriss.
Sacch. alb. ää 5.00 grammes.
Ol. bergamotæ, .03 gramme.

M. Fiat pulv. No. XX.

—*Lancet*, Feb. 21, 1885.

THE TREATMENT OF GONORRHŒA BY JACARANDA LANCIFOLIATA.

In a letter to the *Lancet*, February 28, 1885, DR. ALFRED WRIGHT states that he has employed this drug in acute and chronic gonorrhœa, and in vesical affections attended with purulent and muco-purulent urine. The plant is indigenous to Columbia, S. A., where it is used by the natives as a remedy for venereal diseases. The drug acts specially on the genito-urinary mucous membrane, and appears to have no deleterious effect in any way; whilst it is taken without nausea, contrasting very favorably with most drugs given internally for these affections. As a remedy for gonorrhœa, Dr. Wright believes it will, when known, take the place of all other drugs used internally for this disease. In his hands it has proved most efficacious in diminishing pain and stopping discharge in acute cases; and in cases of gleet he has found it most valuable, having succeeded in effecting a speedy cure by its use in several cases which had resisted previous treatment, both local and general. A fluid extract is made from the leaf, and may be given in doses of twenty minims, or half a drachm, three or four times daily. The introducer of the drug is prepared to send a small supply free of charge, prior to its being placed in the market, to any medical man who will report his opinion to him. It is to be obtained of Mr. E. H. Lawton, 38 Trinity-square, Tower-hill, E. C., London.

OSMIC ACID IN SCIATICA.

We have before, on one or two occasions, called attention to the use of osmic acid in sciatica and other forms of neuralgia, and the favorable results which have been noticed by various physicians have been confirmed by MR. JAMES MERCES (*Lancet*, January 10th, 1885). He states that he has given osmic acid a trial in eighteen cases which had resisted all other known modes of treatment. In twelve cases he succeeded in giving them an absolute relief for a period of three weeks, when he lost sight of the cases, the patients having left the hospital. In six cases he gave temporary relief, though the comfort obtained by its use was greater than that which followed the hypodermic injection of morphine. He used a one-per-cent. solution, injecting three to five minims of the solution deeply over the sciatic nerve at a point midway between the tuber ischii and trochanter major. It produced no constitutional effects, but locally at the seat of the puncture the patient invariably complained of a numb feeling, which, however, was transient.

THE THERAPEUTIC PROPERTIES OF THYME.

CAMPERDON concludes a long article on this subject with the following deductions:

1. In therapeutical doses (three to fifteen grains) the essence of thyme causes mental excitement or stimulation; hence, it is a valuable diffusible stimulant in depression following anæmia, in conditions of collapse, etc.

2. It is an active diaphoretic and diuretic.

3. From its direct action upon mucous surfaces it is to be recommended in catarrhal affections of the respiratory and genito-urinary tracts.

4. It is a prompt hæmostatic.

5. Thyme possesses powerful antiseptic properties, and is well adapted for use in surgery.

6. It is recommended that the internal administration of the drug be supplemented by its employment in the form of baths, fumigations, and inhalations.—*Midland Medical Miscellany*, March 2, 1885.

URETHRAL SPASM IN THE FEMALE RELIEVED BY COCAINE.

DR. GEORGE NEWELL HALL writes that he was called to see a married lady, twenty-five years of age, who was suffering from retention of urine and considerable pain. She stated that she had been subject to these attacks from childhood, aud had taken opium for their relief from the time she was thirteen years old. The spasms lasted, as a rule, for forty-eight hours, and were accompanied with considerable pain and a constant desire to urinate. An attempt to pass a catheter was unsuccessful. A grain and a half of cocaine was then dissolved in an ounce of water, and the catheter being introduced as far as the obstruction, about half of the solution was injected into the urethra. In about five minutes the catheter was again introduced, and passed with ease into the bladder.—*N. Y. Medical Record*, March 21, 1885.

Reviews.

THE INTERNATIONAL ENCYCLOPÆDIA OF SURGERY. Edited by John Ashhurst, Jr., M. D Vol. v. New York: Wm. Wood & Co., 1885.

This, the fifth volume of the International Encyclopædia of Surgery, is in size, quality and finish no way inferior to the preceding four volumes. The articles, which are contributed by the various authors, fully reach the standard called for in such a work. The subjects treated in this volume are mostly those which have become, in a great measure, special branches of surgery, and, therefore, have received most elaborate consideration from the writers, who are known as having devoted their attention especially to these special subjects: and from their studies we have made known to us the latest improvements and investigations relating to these affections, while their experience with a large number of cases in each particular disease, affords them the opportunity of comparing the results obtained by various methods of operating and treatment. Thus are we benefited by their labors, and although, as general practitioners, we fail to have such special training, we can from the published labors of those who are more fortunately situated, in these particular cases, become well informed and fully capable of treating them. The very exhaustive and practical articles contained in this volume, on these special surgical subjects, are just those which the general practitioner may refer to in his daily routine of professional duty, in order to assist him in these special cases.

The article on "Injuries of the Head," is by Chas. B. Nancrede, M. D., and discusses injuries of the scalp, injuries of the skull, injuries of the meninges and brain, cerebral localization, trephining, injuries of the cranial nerves and secondary affections of the brain. This article has evidently been prepared with great care by the writer, the literature relating to the subject has been very thoroughly searched, and all information of any importance is incorporated in the context. The conclusions of the writer are generally logical, and no hesitation is evinced on his part, to express his opinions when they are not in accord with other writers upon the same subject. There is much contained in this article which offers material for study, but we would particularly refer to the considerations presented under fractures, trephining and cerebral localization as being especially worthy of the surgeon's most careful meditation.

"Malformations and Diseases of the Head," by Frederick Treves, F. R. C. S., includes diseases of the scalp, malformations of the skull, fungus of the dura mater, intracranial aneurism, chronic hydrocephalus, and a general scheme of the tumors of the vault of the skull arranged for diagnostic purposes. These various affections are quite exhaustively treated by the writer, who impresses the reader as one familiar with all connected with these diseases, and one who speaks from experience. We may note as of unusual interest, the sections relating to pneumatocele of the skull, tumors of the skull, and the table of tumors of the vault of the skull.

E. Williams, M. D., furnishes the article on "Injuries and Diseases of the Eyes and their Appendages." It treats of the anatomy of the eye, injuries and diseases of the orbit, and of the eye-ball, diseases of the conjunctiva, cornea and iris, cataract, glaucoma, strabismus, diseases of the eye-lids and tear passages, and ophthalmoscopic diseases. We have here the affections of the eye and its appendages which are more particularly connected with surgery, since most of them are dependent upon some surgical interference for their relief or cure. The article has quite a practical tendency, and is one to which the general surgeon may turn with confidence when he needs information upon these diseases, their diagnosis, and the various methods of treatment. The section describing the anatomy of the eye is unusually good.

"Injuries and Diseases of the Ear" is

written by Albert H. Buck, M. D., and includes examinations of the patient, diseases and injuries of the auricle and of the external auditory canal, methods of examining the middle ear and its diseases, diseases of the mastoid process, fractures of the temporal bone, miscellaneous conditions of the ear, and affections of the auditory nerve. Dr. Buck has written quite an elaborate article, which, as is seen from the above enumeration of affections, omits but few, if any, of the diseases that this organ is liable to, and, therefore, offers a most complete treatise upon the ear, regarded from a surgical point of view. The various sections are all complete to the present time, giving the most recent views as to the different diseases and their treatment. The section on diseases of the mastoid process calls for particular mention, and demands careful study by the surgeon.

"Diseases and Injuries of the Nose and its Accessory Sinuses" is contributed by George M. Lefferts, M. A., M. D., the well-known writer and teacher on these special affections, and he presents for our consideration a full description, with the results obtained by himself and others in the various methods of treatment of these special diseases. It includes a description of instruments and methods of examination; diseases of nasal passages; epistaxis; stenosis and closure of nasal passages; affections of septum; foreign bodies, calculi and parasites in nasal cavity; tumors of nose; neuroses of nasal passages; injuries of nose, of frontal sinus; deformities of nose; diseases of ethmoidal cells, of antrum of Highmore and of skin and subcutaneous tissues of nose; on the pathology of hay-fever, and an appendix is added by the editor, on Rhinoplastic Operations, which is a most excellent résumé of this subject.

The article on "Injuries and Diseases of the Face, Cheeks and Lips," by Alfred C. Post, M. D., LL. D., treats of wounds, salivary fistulæ, malformations, ulcers, tumors, cheiloplastic operations, etc. The section relating to cheiloplastic operations is particularly noticeable for the descriptions and illustrations which are given of the many methods of operating in order to remedy these deformities, and it would seem that there is no case which may not be submitted to surgical treatment with a reasonable hope of success.

"Injuries and Diseases of the Mouth, Fauces, Tongue, Palate and Jaws," by Christopher Heath, F. R. C. S. The following affections are ably and concisely described: injuries of mouth, fauces and tongue; diseases of mouth, fauces and tongue; malformations and diseases of palate; diseases of gums and jaws, and operations on the jaws.

"Surgery of the Teeth and Adjacent Parts," by Norman W. Kingsley, M. D. S., D. D. S. While dental surgery is now entirely a separate and distinct branch of medicine, yet the general practitioner is frequently assisted, in his treatment of many cases by having some knowledge of the various affections which the teeth are liable to, and it is from the study of the contribution of Dr. Kingsley, that he may inform himself sufficiently to be able to give the needed advice. The article treats of surgery of the deciduous and permanent teeth, prothetic dentistry and mechanical treatment of lesions of the palate.

"Injuries and Diseases of the Neck," is written by George H. B. Macleod. M. D., F. R. C. S. and F. R. S., Edinburgh. It includes the surgical anatomy, contusions, wounds, abscesses, fistulæ, sprains and cicatrices of the neck; tumors and cysts of the neck; surgical affections of thyroid, parotid and submaxillary glands. The many important and vital structures which are to be found in the neck give great surgical interest to any of the pathological changes that may occur in this region; and in order to fully understand the significance of these changes, a knowledge of the normal surgical anatomy is necessary to appreciate any morbid condition; therefore the introductory section on the "Surgical Anatomy of the Neck" is a very suitable beginning, and one which briefly and clearly gives the necessary information. We would also direct attention to the sections on tumors of the neck, goitre, and affections of the parotid gland.

J. Solis Cohen, M. D., contributes the article on "Injuries and Diseases of the Air Passages." The following subjects are most ably discussed: laryngoscopy; wounds and fractures of the larynx and trachea; œdema of larynx; tracheocele; luxations of cartilages of larynx; fistula and stricture of larynx and trachea; foreign bodies in air passages; laryngitis; abscesses of larynx; perichondritis and chondritis; croup and diphtheria; bronchotomy, laryngotomy and tracheotomy; morbid growths of larynx and trachea; motor disturbances of intrinsic laryngeal muscles and apnœa. These affections are considered more especially from a surgical point of view; and the author, from his abundant knowledge of the literature of these diseases, and his great experience in the treatment of them, has written a most excel-

lent treatise—one that may be referred to for information, or for advice. The section on Morbid Growths of the Larynx and Trachea is very elaborate, and merits careful reading. In regard to excision of the larynx in cases of carcinoma, the author does not think surgery offers, as yet, any prospect of permanent relief. The sections on bronchotomy, laryngotomy and tracheotomy may be referred to as complete and particularly good.

"Injuries of the Chest," by Edward H. Bennett, M. D., F. R. C. S. I., although brief, is one of the most instructive articles contained in the book. The section on Treatment of Pleural Effusions has evidently been carefully prepared, and its study must assist the surgeon in the relief of these affections. The remaining sections include contusions of chest; rupture of lungs, heart and diaphragm; wounds of chest and œsophagus; paracentesis of pericardium; and mediastinal abscesses.

"Diseases of the Breast" is written by Thomas Annandale, F. R. C. S. E.; it treats of the anatomy of the breast, congenital peculiarities, functional and sympathetic conditions of the mammæ, atrophy and hypertrophy of mammæ, inflammations of breast, irritable mammæ, tubercular and syphilitic diseases of mammæ, parasites of mammæ, affections of nipple, tumors of breast and affections of the male breast. The reading of this article has not impressed us as favorably as those which precede it. It is not as complete or as encyclopædic as the other contributions to the volume. The section on tumors is largely a quotation from the work of Prof. S. W. Gross upon the same subject.

"Injuries and Diseases of the Abdomen," by Henry Morris, M. A. and M. B. Lond., F. R. C. S., Eng. This article includes contusions, burns, scalds, eruptions and erysipelas of abdominal parietes; affections of umbilicus; rupture of viscera; traumatic peritonitis; wounds of abdomen; gastric, biliary, urinary, urachal, entero-vaginal, and fæcal fistulæ; false anus; foreign bodies in stomach, intestines and peritoneum; abdominal abscesses; hydatids; cysts of viscera; distention of gall-bladder; cholecystotomy; surgical diseases and operations of kidneys; splenotomy and splenectomy; operations on stomach, pancreas and liver. These affections have received, from the writer of this article, a most exhaustive study, although not more than their importance demands. Two hundred and sixty pages are filled with a most instructive, interesting and practical description of these various lesions. No one section calls for special mention, they are all equally good and deserve most careful study by every surgeon.

The concluding article of the volume on "Hernia," is by John Wood, F. R. S., F. R. C. S., and treats of hernia in general, its causes and symptoms; reducible, irreducible and strangulated hernia; inguinal, umbilical, ventral, obturator, ischiatic, perineal, vaginal, pudendal and diaphragmatic hernia and trusses. This is a creditable article, and gives quite a full and concise account of the different varieties of herniæ. The question of the radical cure of these lesions is more particularly discussed in regard to the method of operating proposed by the author, and if the results obtained by him are taken as evidence, we cannot but accept his treatment as a most decided advance in operative surgery. Thus in reference to the danger of the operation, the author, in three hundred cases lost three patients, and they were in the first hundred patients which were operated on by various methods, while in the last two hundred cases operated on by his subcutaneous method, "not one has been attended by any serious or unpleasant symptom." In regard to the chance of failure in the production of a cure by his operation, he estimates the successful results at seventy-five to eighty per-cent. in favorable cases; in the less favorable cases about sixty per cent. J. H. C. S.

MICRO-CHEMISTRY OF POISONS, Including their Physiological, Pathological and Legal Relations; with an Appendix on the Detection and Microscopic Discrimination of Blood. By Theodore G. Wormley, M. D., Ph. D., L.L.D Professor of Chemistry and Toxicology in the Medical Department of the University of Pennsylvania. With Ninety-Six Illustrations upon Steel. Second Edition.

Philadelphia: J. B. LIPPINCOTT Co., 1885.

The first edition of Professor Wormley's Treatise was long since exhausted, but an examination of its successor makes very plain the reason of the great delay in its publication. Most works on medicine and allied sciences are compilations in great part. Now and then among these mere text-books of the passing hour, looms up a volume of permanent value; a book which is essentially original in its additions to the science of which it treats, or else by the thorough re-cultivation of the old ground by its author has been made a granary whose cleared and sifted contents are invaluable. Both of these virtues are to be found in the treatise of Professor Wormley.

The whole chemistry of the subject has been re-worked over; the true has been separated from the false, and the exact limit and scope of the old tests have been determined, and the knowledge of the world re-cast into a mould of perfectness. Less brilliant though such a task as this may seem than is that of original research, the man who does it thoroughly is perhaps more of a benefactor to his race than he who simply pushes forward the boundaries between the known and the unknown; but to Professor Wormley belongs also the merit of an original investigator, so that scattered through the present volume there are many fresh facts.

The possessor of the old edition will not find it capable of sufficing his needs now that the new one has appeared. So many new facts; so much new matter; so thorough a re-consideration of the old is contained in the new volume, that its possession is essential to the worker in the field which it covers. There have been added an entirely new chapter on gelsemium poisoning, and an appendix on the nature, detection, and microscopic discrimination of the blood, as well as many pages of new matter upon poisoning by potassium chlorate; post-mortem diffusion of arsenic; arsenic in medicines, in fabrics, and in glass; Dragendorff's method for the recovery of vegetable principles; nature of ptomaines; and the preparation, properties, and recovery of jervine.

Of these, probably, the most interesting to the general reader will be the chapter upon blood. The conclusions reached in this by Dr. Wormley are based upon an enormous amount of original work, as well as acquaintance with the literature of the subject, and bear strong evidence of that conservative yet enterprising wisdom which is such a peculiar characteristic of all his work. The author's conclusions are: "The microscope may enable us to determine with great certainty that a blood is not that of a certain animal and is consistent with the blood of man; but, in no instance, does it, in itself, enable us to say that the blood is really human, or indicate from what particular species of animal it was derived."

One of the most remarkable things about this Treatise on Microscopic Chemistry, has been the remarkable beauty and delicacy of the illustrations made by the graver in the hands of Mrs. Wormley. That talents of husband and wife should thus be united for one common end is as interesting æsthetically, as it is novel. We note with pleasure the descent of the talent for laborious art from mother to daughter, as is shown in the new plate, No. 16; very remarkable as it is for its extreme accuracy. The plate represents the size of red blood-corpuscles of six different mammals under a power of 1150 diameters. The extreme variations in the drawings, as made out by absolute measurement, is only the one-thousandth of an inch. In conclusion we congratulate the Wormley family upon having added to American medical literature a book which in its own field is without peer in the world's literature.

NOTES FROM THE PHYSIOLOGICAL LABORATORY OF THE UNIVERSITY OF PENNSYLVANIA. Edited by N. A. Randolph, M. D., and Samuel G. Dixon. Printed by J. B. Lippincott Company, Philadelphia, 1885.

This little brochure of 88 pages is a very creditable record of work done in the last few years by its authors. It is a reprint of fourteen papers, the first of which appeared in 1883, and the last of which was born in the just passed January. Of these papers, probably the most important is the investigation in regard to the nutritive value of branny foods. The results of this study are very important and quite different from the views commonly held in the profession. When it is remembered that Dr. Randolph acquired his degree in 1882, and that his co-worker has not yet passed the student period, it is plain that this book gives large promise for future fruits from the work of its authors. We understand that Dr. Randolph has agreed to write for THE THERAPEUTIC GAZETTE a series of articles upon dietetics. It is a very curious fact that this most important branch of the treatment of disease has hitherto been almost absolutely neglected in American medicine. We doubt not that the future numbers of THE GAZETTE will bear witness to the wisdom of its editors in urging upon Dr. Randolph to put before a larger audience the lectures which he has given in the spring course at the University of Pennsylvania with so much *éclat*.

COCAINE AND ITS USE IN OPHTHALMIC AND GENERAL SURGERY.—By H. Knapp, M. D. New York: G. P. Putnam's Sons. 1885.

This brochure of nearly one hundred pages contains abstracts of the literature of the last few months concerning the subject of which it treats, besides a number of communications, hitherto unpublished, from a number of mostly well-known surgeons and specialists.

It is a valuable record of our practical knowledge of the therapeutic action of cocaine, but it ought to have been preceded by well written studies of its physiological action. It is a curious fact that there has been hitherto no such recent study, at least to our knowledge, in any language. We have attempted to supply this deficit by an elaborate article in the present number of the GAZETTE.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. Third series, vol. vii, 1884. Philadelphia: P. Blakiston & Co.

This book is a handsome volume, containing much good matter, and does credit to the venerable institution which it represents. Owing to the habit which is becoming so prevalent in American medical societies of sending out advanced sheets to medical journals, everything in the book which is of distinct value to the profession has been abundantly published through the course of the year. The volume, therefore, comes on the table, if not exactly flat and unprofitable, sufficiently stale.

THE ANALECTIC.—A monthly periscopic summary of the Progress of Medical Science. Edited by Walter S. Wells, M. D. New York: D. Appleton & Co. 1885.

This book is composed of an innumerable number of short articles, supposed to represent the progress of medicine during 1884, but only, in fact, representing the English medical literature, as there does not seem to be a single original translation or abstract from the French or German. The articles appear, however, to be well selected and condensed.

Correspondence.

AN IMPROVED METHOD OF MAKING APPLICATIONS TO THE UTERINE MUCOUS MEMBRANE.

To the Editors of the THERAPEUTIC GAZETTE.

GENTLEMEN:—The ordinary methods of applying medicaments to the endometrium in the practice of gynæcology has proved so inefficient in my hands that I devised the following described instrument, manufactured by G. Tiemann & Co., New York, for the better performance of this simple measure.

The instrument is, in general terms, a syringe and probe combined, and consists essentially of two parts: the syringe barrel and the probe point. The barrel A is made of sterling silver. It is six inches in length and one-fourth of an inch in diameter. The point B is made of virgin silver and is four inches in length and one-sixteenth of an inch in diameter. It is attached to the barrel by means of a screw-cut cap at *b*, which fastens down closely upon the leather covered shoulder at *a*. It is made of virgin silver in order to better resist the action of acids and caustics, and also in order to secure the flexibility required to adapt it to the varying directions of the uterine cavity. The distal end of the point is perforated by a number of fine pin holes for the escape of medicaments upon operating the syringe. At one side of the shoulder *a* is a pin to which is attached a piece of fine silver suture wire or of fine surgeon's silk.

The method of using the instrument is as follows: the point *B* is screwed upon the barrel *A*, and, the direction of the uterine canal having been learned, the point is bent to the proper curvature. With the piston depressed the point is inserted in the liquid medicament and a quantity drawn up into the barrel by withdrawing the piston. A bit of cotton is then wrapped loosely about the tip of the point covering the perforated extremity and held in place by a few turns of the silver wire or silk thread, which is then brought back and its extremity fastened at *a*. The instrument is then introduced through a speculum and the probe point passed through the os tincæ into the uterine cavity. When the cotton covered point is upon the part to be treated, the piston is depressed, thereby forcing the medicament through the pin holes, saturating the cotton, and, therefore, placing it directly in contact with the parts to be operated upon. During treatment, it is well to place a pledget of cotton under the posterior lip of the os to take up any excess of the application that may escape into the vagina upon withdrawing the instru-

ment. After use, the cotton is readily removed from the point upon unwinding the wire or silk thread, avoiding thereby all force in detaching it which would be likely to injure the flexible and hollow point. After cleaning, the point may be unscrewed and be bound to the side of the barrel by a few turns of the wire or thread to protect its flexibility in carriage.

The advantages of this instrument consist in the facility and directness with which it does the work. It is introduced but once at a treatment, whereas the usual method with a probe or sound wrapped with cotton required passage through the canal of the neck several times, thereby causing damaging irritation. Moreover, the medicament is hereby delivered directly *in situ*, whereas, by the usual method, the operator is usually obliged to witness the medicament squeezed out of the cotton in its passage through the os and run down before his eyes into the vagina, while his cotton is pushed on quite dry into the cavity of the uterus where it is directly coated over with secretions and wholly incapable of the designed effect.

The instrument in my hands has demonstrated its value, and I confidently recommend it to the profession.

J. D. KELLY, A.M., M.D.

UTICA, N. Y.

HYOSCYAMUS AS A HYPNOTIC.

To Dr. H. C. Wood, Editor of the THERAPEUTIC GAZETTE:

Dear Sir: Your interesting articles on the physiological action and therapeutic uses of hyoscyamine have been read with pleasure, as my experience in the use of hyoscyamus fl. ext. exactly coincides with yours.

December 19th I visited a married German lady, finding her suffering with acute mania; and although one grain of morphine sulphate had been given to the patient, by a lady living near, in two doses, the patient was raving, and showed no inclination to sleep or become quiet. The bromides failed; chloral failed. I then administered ten-drop doses of fluid extract of hyoscyamus every half hour in combination with fluid extract of digitalis, and after the third dose the patient became quiet and soon after went to sleep and remained asleep for seven hours. I administered no more until the following evening, when the patient again passed into a quiet sleep. This treatment, with proper attention to diet, was followed by recovery in a little over three weeks. The patient is now perfectly well, with no return of mania. There was, as a complication, mammary abscess, which was treated by strapping after evacuation of contents. The points I wish to impress on the effects of the drugs, as above, and also the fact that the patient was allowed the utmost freedom, no restraint being placed upon her, the watch simply preventing any injury being done to herself or others.

Yours,

F. W. GODING, M. D.

ANCONA, Ill.

A VERY DOUBTFUL CASE.

To the Editors of the THERAPEUTIC GAZETTE:

Gentlemen:

In your next issue will you please recommend a remedy for excessive watery discharge from the nose, accompanied by stinging sensations of the mucous membrane and frequent sneezing. Symptoms of catarrh, but none present. Astringent remedies appear to increase the trouble. Relief can only be obtained at times by stopping the nostrils with cotton. No inflammation of mucous membrane observed to any extent. Trouble originated with a bad cold December, 1883. Several weeks' use of nasal douche with solutions of chloride of sodium and other catarrhal remedies gave but slight relief. General health good.

Respectfully yours,

L. D. POLLOCK, M. D.

TURNEY, MO., March 3, 1885.

[The introduction of the Rhinoscope has made diseases of the nose so strictly a specialty that we do not consider ourselves very knowing about them. We would advise, however, in the case just related, the trial of cocaine, and if this does not succeed, careful local treatment by one well trained in the use of nasal instruments.—EDS.]

Notes and Queries.

PHARMACOPŒIA CHARACTERS AND TESTS FOR ANTIPYRINE, CANNABINE TANNATE, COCAINE HYDROCHLORATE AND PARALDEHYDE.

The above preparations have been proposed by the German Pharmacopœia Commission for admission into the next Pharmacopœia.

The commission have published the following characters and tests for them:

Antipyrinum.—A nearly white crystalline powder, or in colorless columns, nearly odorless, and of a mild, bitter taste. It melts at 100° C. 111° C. It is soluble in less than its weight of cold water, in equal parts of chloroform, in about equal parts of alcohol, and in fifty parts of ether.

An aqueous solution (1:100) yields a copious white precipitate with a solution of tannic acid. Two c. c. of this solution are turned green by the addition of two drops of fuming nitric acid, the color changing to red when heated, and a further drop of nitric acid added. Two c. c. of a weaker solution (1:1000) produce a deep red coloration with a drop of a solution of ferric chloride, which, on the addition of ten drops of concentrated sulphuric acid, passes over into a bright yellow.

The aqueous solution (1:2) should be neutral, colorless or pale yellow, free from any sharp taste, and should not be altered by sulphuretted hydrogen.

Cannabinum Tannicum.—An amorphous, yellowish,or greyish brown powder, smelling of hemp and of a bitter astringent taste. Heated on a piece of platinum foil it swells up very considerably, and, after complete combustion, leaves behind a trace of white ash. It is but sparingly soluble in water, alcohol, and ether; readily soluble, however, in hot water acidulated with hydrochloric acid or in cold spirits of wine, likewise acidulated; 0.1 g. shaken up with a drop of a solution of ferric chloride cause a blackish blue coloration. Its solution is very dilute, and warm hydrochloric acid yields,when cold,a filtrate,in which alkalies produce a white precipitate, and which, when mixed with a solution of iodide, turns muddy brown. Shaken up with a solution of caustic soda and ether, cannabine tannate yields to the latter a narcotic-smelling alkaline substance, which remains behind when the ether has been evaporated.

Cannabine tannate should have no narcotic smell; when incinerated on a piece of platinum foil it should not leave more than 0.1 per cent. of ash. It should dissolve without residue in ten parts of spirits of wine, acidulated with ten per cent. of hydrochloric acid, and requires careful storing.

Maximum single dose, 1.0 g.
" dose " 2.0 g.

Cocainum Hydrochloricum.—A white crystalline powder of a weak acid reaction, and slightly bitter taste, which produces a characteristic transient anæsthesia of the nerves of the tongue. It is easily soluble in water and in alcohol. It is likewise dissolved by nitric, hydrochloric, and sulphuric acids, the latter causing a frothing. A solution of iodine produces in its aqueous solution a brownish red precipitate; the caustic alkalies produce a white crystalline precipitate difficultly soluble in water, but easily so in alcohol and ether.

Incinerated on a piece of platinum foil, cocaine hydrochlorate should leave no residue; it should be soluble without residue in double its weight of cold water, and should impart no coloration to mineral acids.

Paraldehydum.—A clear, colorless liquid with a neutral or slightly acid reaction, of a peculiar ethereal but not penetrating smell, and of a burning and then cooling taste. It has a specific gravity of 0.992-0.998. At low temperatures it solidifies to a crystalline mass, which melts at +10.5° C. It boils at 123° C.-125° C. It is soluble in eight times its weight of water at 13°., and in eight and one-half times its weight at 15° C. It is also miscible in all proportions with ether and alcohol. Its aqueous solutions become cloudy when heated.

Paraldehyde solidified by cold should remelt at +10° C. Mixed with ten parts of water it should yield a clear solution without separation of any oily drops on the surface. A mixture of one c. c. paraldehyde, to which a drop of a normal solution of potash has been added, should show no acid reaction.

To be kept out of contact with light.

Maximum and diurnal dose, 5.0 g.

—*Western Druggist*, February 16, 1885.

POISONING BY THE BITE OF A RAT.

Dr. Millo Carpentier publishes in the *Union Médicale* (No. 183) a case under the heading of "rabies-like symptoms following the bite of a rat," which, as far as we know, is unique in medical literature. A sailor, twenty years of age, working on a schooner in the English channel was, while asleep, bitten by a large gray rat in the upper lip; having washed the very painful wound with cold water, he lay down. An hour after the rat returned and bit him in the left hand, and awakening he caught the animal and attempted to choke it. He received two more bites in the same hand, none of which ever bled. A few weeks later considerable swelling of the hand, fever and profuse perspiration set in. A month later, spots of purpura appeared on the arm, back and thorax, which,

however, soon yielded to external and internal medication.

But the most remarkable features in this case are the grave nervous phenomena that presented themselves immediately after the appearance of the inflammatory symptoms, the patient being seized occasionally with violent dysphagia, excessive facial congestion and extreme nervous excitement. During the paroxysm the fever increased, the eyes assumed an unusual lustre, a loud whistling was audible in the larynx and a copious flow of saliva came from the mouth. He was unable to speak, swallow or respire without impediment during the entire length of the paroxysm, which was always followed by profound exhaustion. Being treated with sulphate of quinine and other nervous tonics, the paroxysms grew less frequent, but were preceded by a distinct aura. Other strange phenomena were the appearance on the last rib of the injured (left) side of a tumor the size of an egg and violet in color, besides emaciation, muscular pain and paralysis, especially in the triceps femoris. But a persistent tonic treatment removed all unfavorable symptoms within six months, the patient becoming perfectly cured.

Millo-Carpentier regards this case justly as one caused by an animal poison and bearing a close resemblance in its symptoms to hydrophobia. Another interesting feature of the case is the apparent combination of the symptoms of hydrophobia and those of snake-bite, a fact suggestive of a close relationship of the different processes caused by bites.

PRESERVATION OF SOLUTIONS OF COCAINE.

The solutions of cocaine are all liable to deteriorate by the growth of microscopic plants, which are nourished by the alkaloid, and therefore destroy it. These growths commence usually within a week, and when once started they increase rather rapidly, and when the drug is then used locally may produce severe inflammatory symptoms. As the salt will always be used in solution, and as many persons will not take the time and trouble for even so small a matter as the making of accurate solutions, it becomes highly important to fix upon a definite standard strength of solution for ordinary uses, and to have this securely protected against change in keeping. Dr. Squibb (*Ephemeris*, January, 1885), shows that there are several agents which prevent these growths in alkaloid solutions, and among the most effective are carbolic acid, salicylic acid, boric acid, and the aromatic series. A small proportion of ether often prevents the growths, and as this seemed least objectionable here, it was tried, but failed, until the proportion was so large as to be irritating to mucous membranes. All the protective agents are somewhat irritant even in dilute solution, and in selecting the one which seemed least irritant, and which was effective in the smallest proportion, salicylic acid was adopted. An incidental objection to this acid is its extreme sensitiveness to the presence of very minute traces of iron. Almost all filtering paper contains iron enough to react with salicylic acid, and in handling extracts, alkaloids, etc., it is not easy to avoid the use of steel spatulas, tinned iron funnels, etc. Hence it is that a very nearly or quite colorless solution of hydrochlorate of cocaine, when mixed with a very dilute solution of salicylic acid, will either at once, or in a very few hours, in proportion to the amount of iron present, become very sensibly deeper in tint, and of a reddish-brown tint. As no possible harm can come from this tint, and as a tinted solution is just as good as a colorless one, this objection to salicylic acid was not considered of sufficient weight to cause it to be rejected. Boric acid seemed to be a much better protective agent, in that its effects upon mucous membranes—of the eye for example—are not at all irritant, but, on the contrary, are sedative. But it is a much less certain protective, and is required in so much larger a proportion than salicylic acid that it was not thought safe to adopt it.

At ordinary temperatures one part of salicylic acid is held in solution by about three hundred and eight parts of water, and it is good practice to keep such a solution standing upon some undissolved crystals for use in protecting solutions of the alkaloids for hypodermic and general use. In making up the solution of alkaloids, a good rule is to take one half water and the remainder of the solution of salicylic acid, as the solvent. This gives to the solution of the alkaloidal salt about one six-hundredth part of salicylic acid, a proportion that can hardly be objectionable in any way, and yet is sufficient to protect the solutions indefinitely.

DEATH FROM NITROUS OXIDE GAS.

The occurrence of a death under nitrous oxide has lately caused a good deal of excitement in Paris. A retired magistrate named

Lejeune, went to a M. Duchesne, a well-known advertising dentist of Paris, to have a tooth extracted. Gas was administered and the operation performed; it was then discovered that the patient was dead. From the fact that there was no appearance of hemorrhage when the extraction took place, it is inferred that death must have occurred just prior to the operation. An examination of the body was made by Dr. Brouardel, but, so far as we can learn, his report has not been made public. Judging, however, from the statements which appear in the French journals, death would seem to have been quite sudden, and to have been due to syncope, or failure of the heart's action, caused by the fear or shock of the operation. One result of this unfortunate occurrence has been that a discussion has arisen in the French papers as to the right of dental practitioners to administer anæsthetics. It appears that, as a matter of strict law, only legally qualified practitioners of medicine are allowed to administer anæsthetics in France, but that this law has seldom been put in force against dental practitioners, even with reference to the use of chloroform and ether. The use of nitrous oxide is not expressly forbidden; and, owing to the general impression that it was free from danger, no question has hitherto arisen as to its use. Whether any attempt will now be made to impose restrictions remains to be seen. Another point referred to in this correspondence is one whose importance has been repeatedly pointed out, namely, the necessity for the presence of a third party whenever an anæsthetic is administered, to give assistance in case of accidents, and also to act as a witness.—*British Medical Journal*, Jan. 24, 1885.

A SIMPLE METHOD OF TESTING THE QUALITY OF HUMAN MILK.

Undoubtedly the best way to test the quality of milk is to have a thorough examination of it made by a competent chemist. As this is generally too expensive and elaborate a procedure, we have various makeshifts in the way of lactometers, cremometers, lactoscopes, etc. All these necessitate expenditure of money and time without a corresponding return in practical results. So true is this, that Professor Tarnier recommends for testing the quality of milk as primitive a method as the following: Take a little milk in a spoon or glass, put a drop on the nail, and judge by its transparency and the way in which it flows, whether it is rich or poor in nutritive elements.

Dr. Paul Helot, Surgeon-in-Chief to the Maternity Hospital at Rouen, has suggested another method almost as simple and much more precise. Taking advantage of the fact that the size of the drops of different liquids differs according to their density or molecular cohesion, he determined the average number of drops in a certain volume of healthy human milk at a temperature of about 16° C.(60° F). The same was done for distilled water. He used for the purpose a Pravaz syringe, holding one cubic centimetre without the needles. It was found that one cubic centimetre of good human milk gave thirty-five drops from the syringe; the same volume of water gave thirty drops. Hence the formula: In a dropper of a given capacity the number of drops of distilled water at 15° C. is to that of woman's milk as six is to seven. Some variations occur within healthy limits; if, however, the number of drops was below thirty-three or above thirty-nine or forty, the milk should be rejected. As human milk varies at different times, the standard adopted was that of a healthy mother nursing a healthy two months' child, samples of milk being taken from each breast at the mid-period of nursing.

Doubtless Dr. Helot's method will prove a useful one when a physician is called upon to judge the quality of the milk of a wet-nurse or a mother. It is at least easily tried, and involves no apparatus but a hypodermic syringe.—*New York Medical Record*, March 14, 1885.

CANNABINON.

This new drug is prepared, as stated in the *Wien. Med. Bl.*, Jan. 15th, 1885, by Bombelon, a druggist, in Neuenahr, from cannabis indica. A dose of one and one-half grains is said to suffice to produce sleep without any unpleasant secondary symptoms. If taken on an empty stomach the drug shows narcotic properties of the highest type, closely simulating the effects of haschisch as described and tested on their own persons by Drs. Richter, of Berlin, and H. C. Wood, of Philadelphia.

Vogelsang has used the drug hypodermically with an emulsion of oil of sweet almonds with moderately good results. Gnauk and Mendel have also tried it but do not regard it so reliable and powerful as chloral or morphine, nor altogether free from the objection of causing unpleasant concomitant symptoms.

Its use though is peculiarly adapted to cases or hysteria and allied states of a disordered nervous system.

A NEW, SUCCESSFUL AND PALATABLE MEDICINE FOR THE TREATMENT OF TAPE-WORM.

Under the above title DR. HOWARD PINKNEY (*San Francisco Med. Lit. Journ.*, Jan., 1885), writing from Sharon Springs, describes his experience with the oil of the pine-needle, made from the *pinus punilio*. A hall-boy of the hotel had suffered for five years from tape-worm. He had been treated for four years in New York, but never had succeeded in getting rid of over four links at a time. Dr. Pinkney, not being able to get any male fern, pelletierine, or pumpkin seeds, therefore made the following experiment: The patient fasted from breakfast, and at 9 p. m. he was given one teaspoonful of oil of the pine-needle in half a glass of milk. The following morning, as there was no perceptible action of the medicine, the dose was doubled. This, the boy said, had a most agreeable taste. One hour later he took a dose of castor oil, and in the course of two hours after this he passed an entire tænia solium, measuring fifteen feet six inches in length, and one-half inch at its broadest part, gradually tapering down to almost a thread. To be positive that none remained behind, he was given two teaspoonfuls more, but no sign of any worm or part thereof passed. "This oil," writes Dr. Pinkney, "contains no turpentine, is fragrant in its odor, and, when mixed with milk, very agreeable to the taste. It produces no strangury, tenesmus, or other unpleasant or distressing symptoms. The patient can generally pursue his ordinary avocations.".

CASCARA SAGRADA.

In a note on Rhamnus Purshiana bark or "cascara sagrada" (*Jour. Ph. Chim.* (5) vi. 80) M. LIMOUSIN expresses the opinion that the four resinous bodies separated from the bark by Prof. Prescott were all more or less derived from chrysophanic acid, which he has observed to be present in it in notable quantities. He states that if the slightly grated surface of the bark be touched with a drop of a strong solution of ammonia or caustic potash, there is an immediate fine, red coloration, which he considers an incontestable indication of the presence of chrysophanic acid. The bark appears to contain a large proportion of tannin, as a drop of perchloride of iron produces an intensely black spot, whilst it scarcely blackens rhubarb. The bark yields a yellowish powder, resembling that of rhubarb, which, like it, becomes colored in the air, especially in an ammoniacal atmosphere. As a result of some experiments with different pharmaceutical preparations, M. Limousin expresses a preference for a tincture prepared according to the Codex formula for tinctures, as compared with the United States Liquid extract.—*Pharmaceutical Journal*, January 31, 1885.

INTERNATIONAL PHARMACEUTICAL CONGRESS.

The sixth International Pharmaceutical Congress will meet at Brussels, August 31st, 1885, and will last until September 6th.

Among other important subjects, the following questions will be considered:

1. Professional questions.
2. Questions pertaining to theoretical or practical pharmacy.
3. Questions referring to chemistry in its relation to hygiene and public health.
4. Questions relating to general, applied, biological, or legal chemistry.

Four subjects will be laid before the Congress by the Committee of Organization for the purpose of being discussed in the full meeting:

1. The plan of a universal pharmacopœia worked out by the committee appointed since the last Congress of London.
2. Pharmaceutical education; preliminary requirements or education; character and standard of scientific studies, etc.
3. Adulteration of articles of consumption; legislation, etc., relating to the same.
4. Drinking water: its characters and tests.

VASELINE IN PASTRY.

The French council of hygiene has prohibited the employment of vaseline in the manufacture of pastry. Vaseline is one of the substitutes for butter which we owe to modern science. It is, from the purely scientific point of view, a great advance on oleomargarine, which has the same affinity to butter that the fat of the animal from which it is made has to its milk, while vaseline has no relation to the animal kingdom at all, but is manufactured from petroleum. Its employ-

ment by pastry cooks is decidedly to be discouraged. It was ascertained some time ago that the same fraternity were employing a more or less poisonous substance—chrysaniline—as a substitute for saffron, which is much dearer, to color their *pâtés;* and almost all the flavors imparted to pastry and confectionery are of chemical elaboration. Butyrate of ethyl is employed to simulate the flavor of the pineapple; caprylic alcohol that of the strawberry. Indeed, it seems as if a serious training in a laboratory were destined eventually to become an indispensable qualification for pastry cooks and confectioners.—*Midland Medical Miscellany*, March 2, 1885.

CARBOLIZED RESIN IN IN-GROWING TOE-NAIL.

Dr. D. Genese (*Maryland Med. Journ.*, March 7, 1885) writes that after using carbolized resin in dental practice for nearly ten years, he was induced to try it in a case of ingrowing toe-nail of a very acute form, in which case it has given permanent relief, arresting the pain and inflammation after the first application. Since then several cases have been treated successfully, the patients all saying relief was immediate.

It is made with Calvert's pure carbolic acid and pure French pine resin. Great care is needed in not having any free acid.

One drop is sufficient to apply at a time, and a pointed orange-wood stick is best to apply it with. Upon two or three applications all trouble disappears; as, after the first application has been on twenty-four hours, the nail can be lifted and a pad of lint placed under it without pain.

DRUGS FOR THE PARIS HOSPITALS.

The estimate of the quantity of medicines, etc., required for the use of the patients in the Paris hospitals for the present year is as follows: 24,000 kilogrammes of licorice root; 15,000 of cinchona; 80,000 of linseed; 6,000 of mustard; 15,000 of cod-liver oil; 20,000 of glycerine; 3,000 of orange flower water; 250 of opium; 2,000 of bromide of potassium; 50 of nitrate of silver; 500 of the sub-nitrate of bismuth; 60 of sulphate of quinine; 12,000 of carbolic acid; 10,000 of chloral. In addition to these drugs, the hospitals are annually supplied with 30,000 fresh lemons and 40,000 leeches. Fresh herbs are estimated to cost 1,946 francs; dry herbs, 45,000 francs.—*Lancet*, Jan. 31, 1885.

AN APPARATUS FOR REMOVING DIPHTHERITIC MEMBRANE.

The great difficulty and often fatal effects which follow the attempts at removal of diphtheritic membrane from the trachea after cases of tracheotomy in diphtheria have led Mr. Busch to devise an instrument for the removal of membrane. It is simply an ordinary œsophageal horse-hair probang in miniature, and its action is exactly the same, the shaft being about the size of a No. 3 English catheter. Mr. B. states that he has employed this instrument several times in the last few years with the greatest satisfaction.—*British Medical Journal*, January 17, 1885.

A NEW CURE FOR INDIGESTION.

We hear that a gentleman of a sedentary life, who has long been indisposed with indigestion and the hypochondriac passion, tried riding and several other sorts of exercises, but with little effect, was at last prevailed upon, by the advice of an eminent physician, to try being tossed in a blanket. This was accordingly performed every other morning for a fortnight, and has been attended with the greatest success, the gentleman being now much better than he has been for two years past.—*Boston Medical and Surgical Journal*, Mar. 12, 1885.

HYDRARGYRUM TANNICUM.

Dr. Pauly, of Berlin, has successfully employed in thirteen cases the new preparation of mercury, introduced by Dr. Lustgarten. The syphilitic symptoms promptly disappeared under its use. The dose is fifteen grains after each meal; salivation and stomatitis did not occur, provided the parts were carefully attended to.—*Deutsche Medizinal Zeitung*, February 9, 1886.

PREVENTION OF CHRYSAROBIN STAINING.

The staining of the clothes caused by chrysarobin may be prevented by making the latter into a dough with water, and after applying to the diseased spot, covering it with a layer of collodion.—*Birmingham Med. Review*, March, 1885.